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ABSTRACT

Five individual study reports included in this volume detail a project to determine the prevalence of disability among American Indians, to identify special problems of American Indians related to vocational rehabilitation, and to survey the extent of cooperative effort among programs conducted under the Rehabilitation Act of 1973. The first report provides an overview of the American Indian population and the influence of the Indian culture on individuals with disabilities. Subsections address socioeconomic characteristics, educational status, health status, unemployment status, tribal membership, government policies, and policy implications for the disabled. The second report is an analysis of the prevalence of disability among American Indians using school based data. A high prevalence 5% to 9% of learning disablities was found. The next report used health related data to analyze the incidence of disability among American Indians and concludes that American Indians lose 1.5 times the number of years of life as all races combined through age 65. The fourth report provides an analysis of labor market participation of American Indians and the implications for rehabilitation, including an unemployment rate about five times higher than that of the overall population. The final report looks at the nature and extent of cooperative efforts by state vocational rehabilitation programs for disabled Indians. Cooperative agreements had been or were planned to be established in ten states. Volume III which comprises the appendices to Volume II is attached. (DB)

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A STUDY OF THE SPECIAL PROBLEMS AND NEEDS OF AMERICAN INDIANS WITH HANDICAPS BOTH ON AND OFF THE RESERVATION

VOLUME II

Individual Reports

Prepared for

U. S. Department of Education
Office of Special Education and Rehabilitative Services
Rehabilitation Services Administration

September 14, 1987

Prepared by

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VOLUME II

Individual Reports

Prepared for

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September 14, 1987

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The Study of the Special Problems and Needs of American Indians with Handicaps Both On and Off the Reservation consists of these three volumes. Volume I provides an Executive Summary of the study findings, recommendations and conclusions, and future research needs. Volume II consists of five individual study reports, representing the data, analysis, and summary of the studies. Volume III provides appendices to the individual study reports.

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SECTION I

OVERVIEW OF THE AMERICAN INDIAN POPULATION AND THE INFLUENCE OF CULTURE ON INDIVIDUALS WITH DISABILITIES

OVERVIEW OF THE AMERICAN INDIAN POPULATION AND THE INFLUENCE OF CULTURE ON INDIVIDUALS WITH DISABILITIES

A study of the special problems and needs of American Indians who are disabled must be conducted within the context of an understanding of the values, beliefs, and practices of the American Indian people. American Indians maintain that a single label groups them together without regard to tribal differences. American Indians are not a homogeneous population, although there are similarities in their value systems and adaptation to the dominant culture.

No two cultures differ more in value systems than the American Indian and the White dominant culture (Richardson, 1978). Although anthropologists and sociologists argue the finer points of the definition of culture, they seem to concur that: (1) culture includes the rules and symbols by which people organize and assign meanings to their life experiences, (2) culture is learned, and (3) culture is shared. Culture influences what people think and do (Wallace, 1970). Lives of Indian people are also affected by acculturation. These different concepts can influence an individual's perception of disabilities, their recognition of solutions to situations requiring rehabilitation, and their selection of certain practices when participating in rehabilitation programs. Examples of specific differences between American Indians and the dominant society's values are described below in the areas of: (a) family systems and social organization, (b) health and medicine, (c) religion, (d) acculturation, and (e) language.

Family Systems and Social Organization

The extended family system forms the economic and social base for American Indian society (Pedigo, 1983) in contrast to the nuclear family system of the dominant society (mother, father and children). The extended family system of American Indians may consist of three or more family units all closely related. Clan members are considered relatives with the same influence on an individual's life as parents, brothers, and sisters. Indians consider many more people to be their relatives than do members of the dominant society. Family relationships are very important. For example, within tribes such as Blackfeet and Acoma, aunts are referred to as mothers, uncles as fathers, and cousins as brothers and sisters.

Today, the extended family continues to be a resource network for many American Indians (Everett, Proctor, & Cartmell, 1983). Members of the extended family have responsibilities to and for one another. Interdependence among family members is a predominant characteristic and needs are met through this network. Thus, extended families provide a primary source of support for the family member. Intervention strategies would benefit from the inclusion of the extended family network for the American Indian in need of rehabilitation services.

For some American Indians, the extended family may not be intact because of varying degrees of acculturation. Individuals with weak and non-existent extended families may need other forms of social support networks. These need to be identified and implemented by service providers.

Health and Medicine

The American Indian concept of health and medicine is at variance with that of the dominant society. For many American Indians, a state of health refers to harmony within one's life whereas disease is caused by disharmony within the individual and/or disconnection with the family, community, and universe. Many American Indians believe that the being is comprised of mind, body and spirit (Locust, 1986). The physical body cannot be separated from the mind and spirit. Thus, if one treats the physical being without treating the mind and spirit, the treatment is not likely to achieve its goal.

In contrast, western medicine provides treatment for illness due to infection, physiological, and psychological malfunctions (Clark, 1985). Thus symptoms are treated, rather than the source of affliction.

Religion

In American Indian languages there is no equivalent word for religion (Brown, 1982). American Indian religions represent traditions that have been present in North America for thousands of years. These traditions have not only survived the test of acculturation, but in may cases they are being reexamined and reaffirmed by the American Indian people. In American Indian society, there is a rich plurality of highly differentiated types of religions. This makes it almost impossible to define or describe American Indian religions in generalities.

Brown (1982) lists three "primal elements" that are universal to all North American Indian religions, past and present: (a) American Indian religion cannot be separated from any aspect of Indian culture, (b) in American Indian culture, people's understanding of their language is an integral part of worship and the spoken work possesses power, just as words have power, the unspoken thought is considered to have power of its own; and (c) the concept of time is cyclical and is a very important aspect of American Indian religious ceremonies.

These "primal elements" may be said to constitute living religions in the sense that core elements of sacred lore, values and the native language are held and lived by certain segments of American Indian society. Today, many American Indians still follow traditional forms of worship that may be specific to their tribal or cultural group. Some American Indians have integrated other forms of worship into their lives such as Catholicism. Further, American Indians consider religion to be a very private matter for the participants and discussion with non-tribal members or non-Indians is typically considered taboo.

Acculturation

Acculturation has been defined differently by various disciplines, but one focal aspect to consider is how this affects the individual involved. Johnson (1974) defines acculturation "as the processes and results of contact between two or more different cultures and this brings about considerable diffusion of cultural traits in one or more directions" (p. 1). Along with this, other processes occur such as development of new intercultural roles and the growth of new customs not found in either culture, and the disintegration of the old culture.

Lowery (1983) identified three adaptations to the dominant culture among the Navajo Indians. These adaptations are considered to be similar for other American Indian tribes. Adaptations of the people were characterized as three groups: (a) acculturated people, (b) autonomous people, and (c) traditional people. The acculturated people are those who have been educated in universities and have returned to the reservation. These people may have grown up on the reservation and want their tribe to move into the modern world, maybe at the expense of losing aspects of their culture. These people may not be comfortable in either world. Autonomous people can move comfortably between the cultures. They may be college educated, but they value their traditions and language. In addition, they are determined to bring their people into the modern world without compromising any of their traditional systems. The third adaptation is the traditional people who have managed to keep the influences of the dominant society to a minimum. These people still retain their language, customs, and belief systems and see no need to change. Indian people across the country can be characterized with orientations ranging on a continuum from traditional to autonomous to acculturated.

Language

The issue of language difference is an important one for rehabilitation because the quality of "second language" or "limited English" speakers can greatly influence the diagnostic and eligibility phase of rehabilitation. These factors can also create communication barriers, thus influencing rehabilitation. Although the number of native speakers is declining, there are still over 250 native languages in the U.S. today (Chafe, 1974). Mass media and increased mobility are influencing the American Indian's increased use of English. Additionally, many Indians who relocate to an urban area do not have family or friends to converse with in their native language.

Although many bilingual speakers can converse in two languages, some may experience limited proficiency in one or both languages. Limited proficiency can be attributed to two factors: (a) quality of the English-speaking model for the young American Indian learner may be someone with limited ability to speak English well, and (b) the structure of most native languages is very different from that of English, thus there is not a one-to-one correspondence from one language to the other.

Since American Indians, as a population, have successfully retained many of their traditional values, beliefs, and practices, efforts to improve rehabilitation service delivery to them must acknowledge these cultural differences in order to be successful. These represent very complex situations, and further efforts at understanding these differences within the context of rehabilitation should be encouraged. Further information on these issues would greatly enhance the work of professionals and service providers.

American Indian Population

The 1980 U.S. Bureau of the Census reported 1.4 million American Indians. This compares with a population of 827,268 in 1970 and 551,669 in 1960. The American Indian population has nearly tripled in the twenty year period from 1960 to 1980 (U.S. Congress, Office of Technology Assessment, 1986). A high birth rate among American Indians contributes to this increase.

Of the total population of American Indians in 1980, 46% (644,000) resided on "identified Indian areas," or in non-metropolitan areas. "Identified Indian areas" are described as reservations, tribal trust lands, Alaska Native villages and historic areas of Oklahoma that consist of former reservations..."(U.S. Congress, Office of Technology Assessment Report, p. 4). In comparison, a recent BIA report (1987) entitled Indian Service Population and Labor Force Estimates lists the on or near reservation population at 861,570.

Four states which ranked highest in total population of American Indians in the 1980 Census with more than 100,000 in each state were California, Oklahoma, Arizona and New Mexico. Fifty-four percent of the Indian population lived in central cities or in urban areas outside central cities. States with the highest number of American Indians in urban areas were California, Oklahoma, Arizona, New Mexico, Washington and Minnesota. The significant increase in Indian population which has occurred in California particularly from 1960 to 1980 can be attributed to the increased population of Indians in urban areas. Ten metropolitan areas with the highest urban population of American Indians were: Los Angeles-Long Beach, Tulsa, Oklahoma City, Phoenix, Albuquerque, San Francisco-Oakland, Riverside-San Bernardino-Ontario, Seattle-Everett, Minneapolis-St. Paul and Tucson.

Populations on reservations range from 1 tribal member living on or near the reservation to 173,018 residents on the Navajo reservation, the nation's largest (1987, BIA). According to the 1980 U.S. Census, half (49%) of all reservation residents lived on 10 reservations: Navajo (Arizona), Pine Ridge (South Dakota), Gila River (Arizona), Tohono O'odham (Arizona),Fort Apache (Arizona), Hopi (Arizona), Zuni (New Mexico), San Carlos (Arizona), Rosebud Sioux (South Dakota), and Blackfeet (Montana), (U.S. Bureau of the Census, 1983).

Socio-economic Characteristics

In 1980 (U.S. Bureau of the Census, 1983), 27.5% of American Indians had incomes below the poverty level compared with 12.4% of the general population who were in this category. Twenty-three percent of the Indian households were headed by women compared with 14% of the households of the general population. The median family income in 1979 for American Indians was $13,678, $13,829 for Eskimo and $20,313 for Aleuts. This compares with a median income of $19,917 for families of all races. Income differences for American Indians across various locations in the U.S. consistently ranges from $6,000 to $7,000 lower than that for the general population.

Income levels differ between tribes depending on the economic base or industry on or near the reservations. Tribes such as the Navajos have forest industries as well as mining activity on their reservation. Some reservations, however, may have a limited land base or perhaps limited opportunities to develop industry on reservations. This affects the level of income among the people from tribes on these reservations.

In an effort to achieve increased levels of self-sufficiency, economic ventures and activities within tribes range from Bingo, forest industries, pencil factory, ski resort, and tourism. In addition, there are numerous arts and crafts centers and guilds as well as tribal museums through which members can sell their crafts and artwork.

Educational Status

School age children. The percentage of American Indian children attending elementary and secondary schools, ages 7 to 15 years, is proportional to that of the White and Black populations. In 1980, 96.6% of American Indians, 97.3% of Eskimos and 97.0% of Aleuts for this age group were enrolled in school. For the White population, 99% of the 7 to 13 year age group were enrolled, and 98.1% of the 14 and 15 year age group. Similarly, the Black population had 98% of the former age group enrolled and 97.9% in the latter age group.

Differences in student enrollment begin to occur for the 16 and 17 year old student populations. Among the American Indian students, those of ages 16 and 17 years who were enrolled in school were as follows: 76.6% of American Indian, 83.4% Eskimo, and 81.6% Aleut. This compares with 89% of the White student population enrolled in school in the same age range, and 87.9% among the Black student population.

Finally, the percentage of high school graduates among all American Indians 25 years of age and older was 55.8% for American Indians, 44.3% for Eskimos, and 58.4% for Aleuts. Within the White population, 68.8% are high school graduates, as are 51.2% of the Black population.

Higher education. In the *Fifth Annual Status Report on Minorities in Higher Education* (1986), overall, the population of minorities is 21.3%. However, enrollment of minorities in institutions of higher education is 17%. For the period from 1980-84, enrollment of American Indians decreased at two-year institutions by 4.2%, but remained steady at four-year institutions. State institutions which had an increase in American Indian enrollments at both two-year and four-year institutions were those in Montana, North Dakota, North Carolina, Texas, New Mexico and Washington. Increased enrollment at four-year institutions only was reported for the states of Arizona, South Dakota, Wisconsin and Minnesota. Enrollment of American Indians increased 2.6% from 1980 to 1984; however, American Indians remained at .7% of the total enrollment.

Enrollment of American Indians in graduate school decreased 6.4% for the years from 1980 to 1984. During this same period, enrollment in law schools increased 11.6%. Of 20 states reporting data, the number of baccalaureate degrees awarded between 1978 and 1984 increased by 16.5%. At the master's level, the overall increase was 19.3%; this represented a 1.9% increase in the percentage of American Indians receiving master's degrees. At the doctoral level, the number of degrees conferred from 1975 to 1984 doubled. In 1975, American Indians received .1% of the doctoral degrees; in 1984, .3% of the doctoral degrees conferred were awarded to American Indians.

Health

Although there have been notable improvements in the health of American Indians, it is not yet comparable to that of the general U.S. population. However, one must be cautious in making overall statements about the health status of American Indians since an improvement in one area could mean a deterioration of health in other areas. For example, 11 IHS areas (data was not available for California) showed a decline in the crude mortality rate, which was counterbalanced by increased rates of disease in other areas like heart and liver. Further, although accidents are no longer the leading cause of death, heart disease has now surpassed accidents as the leading cause of death for Indians (U.S. Congress, Office of Technology Assessment, 1986).

One particularly significant factor in the health status of Indians is the high mortality rate. In the three year period from 1980 through 1982, 37% of the deaths among Indians were 45 years of age or younger. In the general U.S. population, 12% of the deaths occurred within this age group. In a report from the *Secretary's Task Force on Black & Minority Health* (1985), data from 1984-85, the death rate for the same age was reported to be 43%. In addition, excess deaths (the difference between observed rates and the rate within the White population) among American Indians accounted for 87% of the deaths before the age of 45; the comparable rate for Blacks was 39%.

Hospitalization rates paralleled the mortality rate. In 1984, 75% of the IHS hospital patients were under 45 years of age, compared with 48% of the patients in U.S. hospitals who were of the same age.

Of the fifteen leading causes of death among American Indians, 11 of the causes occurred at levels greater than that for the general population. For example, accidents and adverse effects was 3.4 times the rate of the general population, liver disease/cirrhosis was 4.2 times greater, diabetes mellitus was 2.8 times greater, nephritis was 22.8 times greater and tuberculosis was 7.0 times greater. Similarly, the Task Force on Black & Minority Health (1985) found that 80% of the excess deaths for American Indians before 45 years of age was attributed to the following six causes: unintentional injuries, cirrhosis, homicide, suicide, pneumonia, and diabetes.

Unemployment

In the 1980 Census, unemployment rates for all persons 16 years and over were twice that of all races at 13.2% for American Indians, Eskimo, and Aleut, as compared with 6.5% for all races. The Bureau of Indian Affairs (1987), however, reported an employment rate of 38% during 1986 for the Indian population living on or near reservations.

Rates of unemployment among American Indians vary greatly by state as they do by tribe. For example, Kansas reported an unemployment rate of 13% whereas the states with unemployment rates of 58% or greater were Alaska (50%), Iowa (59%), Michigan (54%), Minnesota (60%), Nebraska (59%), New York (51%), North Dakota (51%), South Dakota (61%), Washington (53%), and Wyoming (54%) (1987, BIA). Rates among tribes also vary; examples of unemployment are Jicarilla Reservation, 13%; Rosebud Reservation, 82%; Acoma Pueblo, 51%; Blackfeet Reservation, 25%; Navajo Reservation, 39%; Osage Tribe, 9%; and Seminole Tribe, 19% (Bureau of Indian Affairs, 1987). Eighteen years ago in 1969, estimates of unemployment among American Indians ranged from 12% to 74%. The average unemployment rate among American Indians was 38% which was 10 times greater than the national rate (U.S. Department of Labor, 1969). Within a span of 18 years, the rate of unemployment continues to be an average of 38%.

Tribal Membership

Tribal membership becomes a prominent issue when it is considered a requirement for eligibility of services like health care, education, social services, or rehabilitation. For example, at the federal level, eligibility for health care through IHS "is not explicitly limited to members of federally recognized tribes (due to) the variation across tribes in requirements for tribal membership. Congress has therefore chosen not to restrict services to members of federally recognized tribes" (Office of Technology Assessment, 1986, p. 6). A second example is that of eligibility for educational services, the requirement of one-quarter or more blood quantum for enrollment in BIA funded schools was changed through a recent U.S. Appeals Court decision (Zarr v. Barlow). Eligibility for enrollment in a BIA funded school now requires that a student be an enrolled member of a federally recognized tribe or that the total blood quantum be one-fourth or more. At the tribal level, tribal membership might be required for scholarships, land allocation, receipt of tribal royalties, or the right to hold office. Tribes were further prompted to establish criteria for tribal membership by such factors as: (a) increased numbers of tribal members, (b) increased occurrences of marriage outside of one's tribe, and (c) the increased number of tribal members who moved (temporarily or not) to urban areas.

Although tribes have established criteria for tribal membership for use within their respective tribes, they have resisted efforts to establish a uniform set of criteria which would be applicable for all tribes. Examples of varying criteria for tribal membership are: (a) the Cherokee Tribe, who requires proof of descendancy; (b) the Citizen Band Potawatomi Tribe, who presently requires one-eighth blood quantum (a proposal to change tribal enrollment based on descendancy will be determined by election in June, 1987); and (c) the St. Croix Chippewa Tribe, who requires one-half blood quantum. More than 25% of the tribes use the criteria of one-fourth as the minimum level of blood quantum in order to be recognized as a tribal member.

Government Policies for Indian People

Federal policy and Indian communities. Vine Deloria, an American Indian political scientist, contends that the process of formulating federal Indian policies has changed in recent years (1985). Today, any federal policy change or legislation concerning American Indians or Alaska Natives rarely goes unnoticed or is enacted without Indian reaction or recommendations. Deloria attributes this change in policymaking to a keener sense of justice and a willingness on the part of policymakers to seek programs or policies which are more appropriate for Indian communities.

Federal policy affecting American Indians and Alaska Natives, according to Deloria, occurs at two levels (1985). At the congressional level, policies are often developed under the best intentions and in the spirit of social responsibility. At the local level, people or agencies are charged with implementation of policies. Implementation of policies at the local, state, and regional levels is subject to interpretation and its perceived importance and priority. Thus, implementation of policies through services may be evidenced at various levels of intensity. The overlays of regulations and policies at the Congressional level, state, and local levels can create difficulties in accessing or gaining eligibility for services.

The influence of political climates on federal Indian policy account for the vacillation of ideologies. The central theme of policies and legislation in the early years of this country was to civilize and assimilate American Indians into the majority culture. Steps in this direction intensified by the late eighteenth century, when the land base, population, and military power of the tribes had been greatly diminished. One example of assimilation policy was the passage and implementation of the General Allotment Act of 1887, which authorized the president to negotiate and allot thousands of acres of Indian land to individual Indian families and transfer the surplus land to the federal government for settlement by non-Indians. Through this policy of land allotment, the federal government assumed an aggressive role in managing Indian land and slowly became a powerful force in deciding the fate of Indian property. For example, when the General Allotment Act was amended in 1891, the policy gave the U.S. Secretary of Interior the right to assume a guardianship role in the lease of land for Indian children, the aged, and persons with disabilities (Deloria & Lytel, 1983). Most families and relatives of those placed under guardianship were themselves deemed "incompetent" (Washburn, 1973).

By the 1920s, numerous protests and demands were advanced to Congress calling for reform. The passage of the Indian Citizenship Act in 1924 granted citizenship to all American Indians who heretofore had been denied the right to vote since they were not recognized as American citizens. This law, however, did not apply to Indians living in Arizona. Interpretation of the "federal trust relationship" held by Indians was the basis for denial of the right to vote until the State Supreme Court reversed the decision in 1948 (Harrison v. Laveen).

Some of the controversial governing issues were documented in the study entitled the Meriam Report (1928). The study cited many inadequacies including: (a) lack of trained personnel, (b) a poor health care delivery system, (c) poor economic planning of programs, (d) substandard educational programs, and (e) unresolved legal and jurisdictional problems. The report linked many of these problems, including poverty, to the federal policy contained in the passage of the General Allotment Act. The diminished land size had placed most Indian families in poverty resulting in increased dependency on the federal government for welfare, education, health care, and economic survival.

Results of the study coupled with continued pressure on Congress led to the passage of the Indian Reorganization Act in 1934 and resulted in a new BIA administration under the leadership of Commissioner John Collier. This Act, dubbed the Indian's New Deal, helped set a new federal course by ending the federal policy of land allotments. This law also allowed tribes to set up their own form of self-government, albeit within a framework recommended by the federal government. While some tribes resisted the model for self-government, most welcomed the end to land allotment which had impoverished them. Collier's administration also attempted to regain some of the land for the tribes and in some cases sought land for those who had been left landless.

As a result of the Reorganization Act, there was also a reversal to the policy of assimilation. An Indian cultural renaissance was encouraged and some traditions and religious practices such as the Sun Dance were again permitted. Indian children, enrolled in federal boarding schools, were allowed to speak their native tongue without punishment, and on some reservations or the BIA schools, began to experiment with bilingual education. In addition, the passage of the Johnson-O'Malley Act in 1934 authorized financial incentives for public schools to educate Indian children.

The era of rebuilding and revitalizing Indian self-government and culture, however, suffered a major setback as a result of changes brought about by World War II. After the war ended, Congress began to explore ways to cut federal spending. Initiatives for " getting out of the Indian business" were taken seriously and a new word appeared in these initiatives--"termination".

Since termination started out as a money-saving initiative, the first step towards the realization of this new policy was a call for a study and the identification of Indian tribes deemed economically self-sufficient with an objective to terminate these tribal groups. The BIA undertook such a study and as a result of their recommendations, a seemingly harmless resolution, House Concurrent Resolution 108, was passed in 1953 without a single negative vote. The end result of this endeavor was removal of specific tribes "from Federal supervision and control ...." These tribal members were then made subject "to the same laws and entitled to the same privileges and responsibilities as are applicable to other citizens of the United States...."

Between 1953 and 1962, a number of other termination bills or administrative actions were taken which underscored the desire of the federal government to sever its ties and obligations to Indian tribes. Through P.L. 83-280, legal jurisdiction was transferred from the federal government to the states in California, Minnesota, Nebraska, Oregon, Wisconsin, and the territory of Alaska. Congress also took action to transfer the federal Indian Health care program from the BIA to the U.S. Public Health Service (The Transfer Act of 1954) in an attempt to improve the health of the Indian people. More Indian children were also permitted into public schools off Indian reservations when the Federal Impact Aid Act of 1950 (P.L. 81-874) provided additional funds to school districts with enrollments of school children residing on nontaxable federal lands or on military bases.

The BIA's own administrative policies during this time were also characterized by assimilationist efforts. For example, increased federal funds were sought to relocate Indians to cities for jobs or job training. Many of the young Indians were provided with special funding to relocate to the cities and once there, were often resettled by the BIA in areas where they had little contact with other Indians. As a result of this isolation, many of the relocatees failed to adjust to city life and subsequently returned to the reservation, some only to be sent again on another relocation. Those who remained in the city often did so only because there were no jobs on the reservation. As the years passed, more Indians moved to cities, but most have continued to maintain contact with their reservation families with the desire to return to the reservation (Native American Research Group, 1975).

While the relocatees of this era did not always fare well, the Indian tribes who were terminated were for the most part devastated. After years of attempting to become part of the mainstream and remain economically self-sufficient, the end result of the new "freedom from federal trusteeship" for the terminated tribes was increased poverty. With this experience and the anticipation of more of the same, one tribe, the Menominees of Wisconsin, embarked on a course to regain their trust status with the federal government. Although failure of the termination policy was denounced by a succession of presidents, the policy did not end officially until 1973, when the Menominee Restoration Act was signed into law (Fixco, 1986).

Some other important changes began to occur in the 1960s as the national War on Poverty was initiated. Indians became recognized as one of the most impoverished minority groups in the United States and as such became eligible for a number of programs funded by the Office of Economic Opportunity (OEO). Some tribes were able to administer their own programs such as Headstart, health outreach, economic development, legal advocacy, job training, and innovative community improvement projects.

Through OEO, Indians were given a new point of access to federal programs. An "Indian Desk" in OEO was established with the appointment of a special liaison to handle Indian concerns. Over the next decade, this practice became increasingly common at the federal departmental level as well as at some levels in various state governments.

Despite the introduction of the OEO programs, the pivotal role of the BIA in the lives of reservation Indians remained unchanged and was, in fact, reinforced because a number of legislative amendments began to set aside federal funds for Indians not being served by the states. As a result of these changes, the BIA soon emerged as the "51st State" (on paper) and was supplemented with its own allocation with special program monies earmarked for use on federal reservations by tribes. For example, when the Elementary and Secondary Education Act (P.L. 89-10) was enacted, the BIA along with the states, was allocated funds by the U.S. Department of Health, Education and Welfare to supplement budgets for schools with substantial number of children from low-income families.

As the issues of civil rights and economic opportunity began to lose momentum in face of the escalated U.S. involvement in the Viet Nam conflict, Indian leaders and organizations continued to press for a new federal Indian Policy reflecting the philosophy of self-determination as proclaimed by President Nixon in 1970. This presidential proclamation was issued during the height of public protests against governmental policies. Indian groups and their supporters were receiving considerable media attention here and abroad with such protests as the occupation of the Alcatraz Island, the show of force over fishing rights in Washington state, the occupation of Wounded Knee, South Dakota, and the eventual trek across the United States during the Trail of Broken Treaties, as well as the temporary take-over of the BIA offices in Washington, D.C. The Wounded Knee protest resulted in a promise of congressional inquiry by then Senator James Abourezk who, as chair of the Senate Select Committee on Indian Affairs, obtained congressional support to establish the American Indian Policy review Commission. The special two-year study yielded volumes of reports, but did not produce an overall or more coherent federal Indian policy.

Independent of the activity over the American Indian Policy Review Commission, other impressive legislation benefitting Native Americans was passed during the 1970s. For example, public and political outcry over the public schools' misuse of educational funds for Indian children resulted in the passage of the 1972 Indian Education Act (P.L. 92-318). This law established an Office of Indian Education within the U.S. Department of Education to help monitor and evaluate funds going to educational institutions serving Indian children, youth, and adults. In addition, legislative actions during the 1970s included: (a) the Indian Financing Act of 1974; (b) the Indian Self-Determination and Education Assistance Act of 1975; (c) the Indian Health Care Improvement Act of 1976; (d) Indian Child Welfare Act of 1978; (e) Tribally Controlled Community College Assistance Act of 1978; and (f) the American Indian Religious Freedom Act of 1978. Although the benefits of each of these laws were and are important, the Indian Self-Determination and Education Assistance Act (P.L. 93-638) is the most well known of these acts because it has enabled tribes to subcontract and administer programs formerly under the BIA or Indian Health Services.

Today, despite the desire for increased self-determination by most tribes, financial resources of the tribes are inadequate. Gains made towards self-sufficiency during the 1960s and early 1970s have been curtailed severely or cancelled as the national budgets have been cut and/or slated for phase-outs.

Government Policies and Implications for Individuals with Disabilities

The fact that Indians live on federal lands and are served separately by the BIA and Indian Health Service (IHS) has given rise to perceptions that reservation dwellers are "outside" state jurisdictions and services. This and other cultural misunderstandings have compounded the resource access problems for individuals with disabilities in many Indian communities. In an effort to combat this problem, a few Indian communities have begun to develop their own resources for people with disabilities although they are often besieged by the lack of funds and/or other support. These "new developments" have only been possible because of changes to the existing laws regarding services for people with disabilities which allowed for set-aside funds.

The reservation lands, for the most part, are unproductive and are inadequate to sustain stable economic support for those who live on them. Most of the formal institutions on the reservations are owned or operated by non-Indians, i.e., the health care system, the educational system, the churches, and the governmental agencies. English is the official language and the majority of the top-level administrative and professional services for, or on behalf of, Indian people are provided by non-Indians.

The reservation land is held in trust by the federal government and, in some instances, may be "leased" to non-Indian ranchers, miners, oil companies, farmers, and others. All of this complicates the existing tangles of the federal government-Indian relationship. Many of the people who are ill or disabled have to travel extensive miles to receive health or other needed services. In many Indian communities, modern conveniences which are taken for granted in the dominant society are non-existent in the American Indian communities. For example, less than 10% of those who live on the Navajo reservation have telephones and less than 40% have indoor plumbing or potable water. In addition, some states are reluctant to recognize Indian citizens or to develop roads, water or services for the reservation-residents in their state because of taxation issues. Reservations thus form pockets of abject poverty, under-employment, poor health, and poor housing, all of which are symbolic of a dependent culture.

Economic dependency, psychological depression, and poverty result in passive resistance at best and helplessness at worst. Throughout history every type of social reform known to planners has been introduced or practiced on Indian reservations for short periods of time and then phased out without comparable replacements.

Despite the complex bureaucratic layer, most Indian communities maintain a social structure that is egalitarian, informal, and although not always visible to non-Indian administrators, tightly integrated. Non-Indian administrators may perceive the whole reservation as one community with social unity and a cooperative spirit to work together. The "functioning" Indian communities, however, are actually smaller and generally revolve around extended families, church groups, and other "common cause" groups, who are responsible for getting things done. The social organization of most Indian communities is adaptable, fluid, and in many instances, holds the power to deal with issues affecting the individual, family, or the tribe.

In the complexity of multiple governmental levels, people with disabilities are often confused and uncertain as to the nature and type of services available, and agencies such as Rehabilitation Services Administration (RSA), Office of Special Education Programs (OSEP), Administration on Developmental Disabilities (ADD), Office of Civil Rights, and the Department of Health and Human Services are relatively unknown. The reasons for this vary from one Indian community to the next. Toubbeh (1987) cited a number of these barriers, including ineffective planning, jurisdictional problems, and inadequate financial resources (p.4).

In the discussion of rehabilitation services for one Indian tribe, Morgan, Guy, Lee, and Cellini (1986) explained why they think mainstream vocational rehabilitation for the tribe in question has failed:

> One reason is that the provision of vocational rehabilitation services to members of racial or cultural minority groups (including American Indians) was not emphasized until the early 70s. And since that time, rehabilitation programs and facilities have done little to improve the employment prospects of disabled Indian populations. Another reason is that the rehabilitation movement has operated under the assumption that jobs are available, and the process of rehabilitation involves matching the disabled with suitable and available employment. This assumption may not be true for American Indians since the unemployment rate among the 140,000 Navajos residing in New Mexico, Utah, and Arizona has recently been as high as 75% (p. 25).

The authors also note that cultural differences is another important factor (Morgan et al., 1986). The lack of culturally relevant programs has led to a breakdown in communication and/or conflicts with values, lifestyles, and beliefs of the Indian clients. Hammond (1971) also noted that the "remoteness of many Indian reservations from urban areas and existing facilities and the low population density of rural reservations" as discouraging successful rehabilitation efforts (p. 279). According to Hammond (1971), these problems, plus the isolation of Indian reservations, are reasons why professional [non-Indian] workers are reluctant to participate in rehabilitation programs on reservations.

Similar problems occur in the area of special education for Indian children with disabilities. Ramirez and Smith (1978) of the Council for Exceptional Children stated that the educational problems of Indian children are enormous and that Indian children with handicapping conditions have been denied access to the specialized services they require.

As noted by the authors, part of the confusion in providing special education services stem from the many different educational delivery systems--public, private, federal, and community-controlled schools that exist on reservations. Financial incentives such as per capita funds provide an impetus for serving handicapped children.

Services and resources for people with disabilities have been made possible through federal state and grants, such as the Education for all Handicapped Act (P.L. 94-142); Rehabilitation Act of 1973, as amended recently; and the Carl D. Perkins Vocational Education Act (P.L. 98-524). The participation of handicapped children in BIA and Indian-controlled schools was made possible by appropriation of special education funds to the BIA from the U.S. Department of Education. The Rehabilitation Act and Vocational Education Act also have provisions for participation of Indian tribes.

Where services exist, there are also many gaps. For example, most available services in Indian communities are for school age children and not adults or those who are more severely disabled. In addition, when Indian youth with more severe disabilities reach the age of 21, they must either leave the reservation for services or return home. Once home, many regress because they are no longer in any training or educational programs available to them near their homes. Important changes reflecting these problems can be seen through the establishment of three Indian vocational rehabilitation programs, the Navajo, Shoshone-Bannock of Idaho, and Chippewa-Cree of Rocky Boy, Montana, which attempt to deliver services within the context of their respective reservations.

SECTION II

ANALYSIS OF THE PREVALENCE OF DISABILITY AMONG AMERICAN INDIANS: SCHOOL-BASED DATA

ANALYSIS OF THE PREVALENCE OF DISABILITY AMONG AMERICAN INDIANS: SCHOOL-BASED DATA

The primary purpose of this study was to determine prevalence rates of handicapping conditions among American Indian students. A secondary purpose was to compare such prevalence rates with prevalence rates among other minority groups and among Whites. This information is important in order to provide information relative to the future rehabilitation needs of adults from this minority population.

Two data sources were used in this study. The first was the Fall, 1984, survey conducted by the U.S. Department of Education, Office of Civil Rights. The second data source used was 1986 enrollment data supplied by the U.S. Department of Interior, Bureau of Indian Affairs.

Determining the prevalence of handicapping conditions among American Indian students and comparing these prevalence rates to other minority groups and to the population at large is a complex procedure. It would not be accurate to simply determine prevalence rates for the school population at large and assume identical prevalence rates for American Indians. Numerous studies have shown that prevalence rates are different for minority children than for White children. When the percentage of enrolled minority students is considered, disproportionately high and low identification rates have been found for certain minority groups in certain handicapping conditions.

In addition, there are systematic differences in prevalence rates and patterns of minority children across handicapping conditions, across sections of the United States, and from state to state. For this reason, analyses of prevalence rates of American Indians and other minorities should make individual states the unit of study, rather than considering data only from the nation as a whole.

American Indian students attend both public schools and schools administered and staffed by the Bureau of Indian Affairs, as well as private schools. According to the 1980 U.S. Bureau of the Census report, just over one half million American Indian children are enrolled in schools in this country, with approximately 306,000 attending public schools. This latter figure may be somewhat low, since the U.S. Office of Civil Rights, after examining data from their 1984 survey, projected slightly over 400,000 American Indian students in public schools in this country. In addition, slightly over 40,000 students attend Bureau of Indian Affairs schools. Therefore, Bureau schools serve only 10%, plus or minus 2%, of all American Indian students in the country (Cordova, 1987).

From this data, it can be seen that BIA data alone is insufficient for describing the status of American Indians nationally, since only a small percentage of American Indian students are educated in the BIA system. Therefore, in this study, public school data as well as BIA data is analyzed. Data from all 50 states is analyzed in order to arrive at the most accurate estimates of handicapping conditions among American Indian students between the ages of 5 to 21 years in this country.

Source of Data

Two major sources of secondary data were used. A comprehensive survey of the number of children served in public schools by handicapping condition was conducted by the U.S. Department of Education, Office of Civil Rights, and enrollment data was available from the U.S. Department of the Interior, Bureau of Indian Affairs. Therefore, data for this study was obtained from the following two sources:

1. The Fall, 1984, Elementary and Secondary Schools (E & S), U.S. Department of Education, Office of Civil Rights, Survey.

2. Enrollment data for 1986 supplied by the U.S. Department of Interior, Bureau of Indian Affairs.

Fall 1984 Elementary and Secondary Schools Office of Civil Rights Survey

An annual survey of children with handicapping conditions in elementary and secondary schools is required in order for the U. S. Department of Education, Office of Civil Rights (OCR) to fulfill its responsibilities under Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and Section 504 of the Rehabilitation Act of 1973. This survey has been administered since the 1967-1968 school year. The latest data pool was used for this study and is from the 1984-1985 sample survey. The age range could vary from 3-21 years to 5-21 years depending upon the state mandate for services to children with handicapping conditions.

The OCR survey sample was selected from two levels: (a) district level survey entitled ED 101, and (b) school level survey within selected districts entitled ED 102. The universe, or population to which sample estimates are to be projected, consists of all public schools (elementary and secondary) in the 50 states of the U. S. and Washington, D.C. The sampling procedure consisted of two parts: (a) a stratified sample of districts based on size, and (b) a random sampling within each stratum. School districts were the initial sampling unit to be selected. First, they were stratified into two sizes. Those with enrollment greater than or equal to 300 were in one group, while districts with less than 300 students were in the other group. Sampling frames were generated for each stratum, and the districts were randomly sampled within each stratum.

Next, the individual schools were selected utilizing a similar sampling procedure. Individual schools within each sampling district were selected for inclusion in the sample. All schools with an enrollment less than 100 were included. Schools with enrollment greater than or equal to 100 were subjected to a dual sampling selection scheme. First, all special education, vocational education, and disciplinary schools were automatically included in the sample which was, in effect, a judgement sample. The rest were alphabetically arrayed and every tenth element selected from the frame, until a quota of 100 schools was reached. This last procedure constituted a systematic subsample.

There were 2,250 districts drawn from a universe of 15,950 districts that had enrollments of 300 or more. These selected districts contained 32,495 schools and 19,560,037 pupils. The second stratum (districts with enrollments less than 300) resulted in 1,260 districts being sampled from a total of 15,950 districts. These districts contained 1,437 schools and 155,833 students.

The following items of information were provided in the OCR survey data: (a) state name, (b) number of districts in the sample, and (c) number of schools within districts in the sample. In addition, the district summary report included the name and address of each district, as well as the number of schools contained therein.

Information in the OCR report was provided as subtotals for 5 types of categories:

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1. Racial/ethnic subcategories, including:

    (a) American Indian
    (b) Asian
    (c) Hispanic
    (d) Black
    (e) White

2. Special education subcategories, including:

    (a) educable mentally retarded
    (b) trainable mentally retarded
    (c) speech impaired
    (d) seriously emotionally disturbed
    (e) specific learning disabilities

3. Sex

4. Limited English proficiency data (in the district summary reports only)

5. Student enrollment in home economics, industrial art, and physical education classes (in the district summary reports only).

In addition to reported values (actual counts from the survey itself), OCR reported projected values. The reported values were used to generate the projected values. For example, the total number of American Indians enrolled in public schools in the nation was projected from the number of American Indians reported in the survey. Projections were calculated for all variables for which the survey provided observed (reported) data. Both reported OCR data (actual data from the survey sample) and projected OCR data (OCR projections calculated from reported data) are discussed in this report. Additional projections are made using a variety of data and were generated specifically for this report.

In determining projected values, OCR used the school or the district as the initial unit of analysis. The inflation or weighting factor (by which each sample value was multiplied in order to obtain the projected value) was the inverse of the probability of inclusion in the sample. This factor needed to be increased upward to allow for missing and/or non-response districts originally selected (e.g., total eligible districts for the sample exceeded total actual respondent districts due to non-response). Therefore, the inflation factor needed to be increased so as not to understate the projected values.

The original sampling design depended upon the inclusion of districts that served as clusters containing more than 100 schools from which selected schools could be sub-sampled if they so chose. All special education schools within each district were to be included automatically. The remaining schools within each district were to be considered a systematic sample, with every tenth element drawn from an alphabetized frame.

Of the 40 districts included in the final sample survey, only five proceeded to sample through the self-selection process. The weighting factor for self-selected districts was slightly altered. In their case, the weighting factor for the systematic sub-sample (non-special education schools) was the ratio of the total number of schools in the district divided by the number of schools in the systematic sub-sample.

The special education school data was then added on directly after inflation by the above weighting factor. All of the above projections were aggregated and then compared side-by-side with the computed universe parameters of the corresponding 1984 survey. This demonstrated the relative closeness, or accuracy, of the projection-weighting scheme in arriving at universe totals.

BIA Enrollment Data

The U.S. Department of Interior, Bureau of Indian Affairs (BIA) provided data on school-age children enrolled in BIA schools. This data was from students in BIA schools aged 5 through 21, was based on a child count conducted in the last week of September, 1986, and incorporated adjustments made by the schools as of October 22, 1986. The Bureau reorganized the enrollment data in order to show enrollments in all handicapping conditions in each of the 19 states in which the BIA maintains schools and has identified students who are handicapped The total enrollments of American Indian children in BIA schools were also supplied. Data from the following states was analyzed:

1. Arizona
2. California
3. Florida
4. Idaho
5. Iowa
6. Mississippi
7. Maine
8. Minnesota
9. Montana
10. New Mexico
11. North Carolina
12. North Dakota
13. Oklahoma
14. Oregon
15 South Dakota
16. Utah
17. Wyoming
18. Washington
19. Wisconsin

(There are also BIA schools in Kansas, Louisiana, Michigan, and Nevada. However, BIA schools in these states serve state recognized tribes. Therefore, these schools receive no BIA funds and these children are represented in the OCR data, rather than the BIA data.)

Comparing BIA and OCR Data

Although the data are similar, there are differences between the BIA and OCR data. First, the BIA data represents an actual count of all students in the 19 states listed above who were students in BIA schools. The OCR data, on the other hand, was not derived from surveying all schools in the U.S., but was instead derived from a sample of American schools as described earlier in this section.

Another difference relates to the categories of handicapping conditions represented in the two sets of data. The OCR data listed the following handicapping conditions:

1. educable mentally retarded
2. trainable mentally retarded
3. speech impaired
4. seriously emotionally disturbed
5. specific learning disabled

The BIA data, on the other hand, reported prevalence by categories that more closely parallel the P.L. 94-142 categories. The data was further broken down into full-time versus part-time placement. Full-time placement was defined as a placement in which the student spends 60% or more of his or her time in special education, while a part-time placement was defined as placement in which the student spends less than 60% of his or her time in special education. Full-time placements were reported for the following categories of handicapping conditions:

1. deaf
2. blind
3. severely multi-handicapped
4. severely/profoundly retarded
5. severely emotionally disturbed
6. specific learning disabled
7. mentally retarded
8. residential handicapped

Part-time placements were reported for the following categories:

1. emotionally disturbed
2. specific learning disabled
3. mentally retarded
4. multi-handicapped
5. hard of hearing
6. visually handicapped
7. orthopedically impaired
8. other health impaired
9. speech impaired
10. residential handicapped

By combining figures from the full-time and part-time categories, the following total categories were generated:

1. deaf and hard of hearing
2. blind and visually handicapped
3. multi-handicapped (combination of severely multi-handicapped and multi-handicapped)
4. mentally retarded (combination of severely/profoundly retarded and mentally-retarded)
5. seriously emotionally disturbed (combination of severely emotionally disturbed and emotionally disturbed)
6. specific learning disabled

The OCR data did not include prevalence rates for the low incidence handicapping conditions. This was not judged to be a major problem, however, since relatively small numbers of children fall into these categories, and since prevalence rates for these conditions were made available by the BIA from their schools.

A third difference in the two data sets used for this study is that the OCR data was obtained from a non-duplicated count for all categories. That is, any given handicapped child can appear in one and only one category. In the BIA data, on the other hand, some of the students in the speech impaired category and all of the students in the residential handicapped category were also counted in one other category. This artificially inflated the numbers and calculated percentages in the BIA data. The degree of inflation can be appreciated by comparing the BIA count which employs duplication, with a count of total actual students (non-duplicated). Although the official BIA count (conducted for the Indian Schools Equalization Programs) showed a total of 6,816 students with handicapping conditions, the BIA advises that there are only 5,400 individual students. The difference between these two figures is due to the duplication process explained above for students with speech impairments and residentially placed students..

Non-duplicated counts are available from the U.S. Department of Education since the BIA is required to file a P.L. 94-142 report and since that report must be non-duplicated for all categories. However, it was decided to use the duplicated counts supplied by the BIA for the following reasons:

1. The BIA indicated their ability and willingness to reorganize their duplicated count by state. This made it possible to examine the prevalence of handicapping conditions by individual state. The BIA indicated that it would not be possible to reorganize non-duplicated P.L. 94-142 counts by state. Thus, if this data were used, no state level breakdown would be possible.

2. Although duplicated counts and prevalence percentages calculated from them would be inflated, the need for services might better be reflected in duplicated counts, since a given individual with a speech impairment who is also learning disabled would need two very different types of rehabilitation services. Thus, the duplication of the count of individuals in the speech impaired category might actually be more valuable for purposes of planning future rehabilitation services than would non-duplicated counts.

Data from the BIA, therefore, should not be interpreted as accurate counts of absolute numbers within each category.

Data Limitations. The major limitation of the current data sets is that the specific handicapping conditions identified by OCR and BIA are different in many cases. Therefore, it is difficult to compare results from the two data pools directly, as well as to make uniform projections based on a common set of special education categories.

For one thing, the BIA subtotals of "speech impaired" turn out to be spuriously high. This is due to a "double counting"; that is, the BIA counts any student who gets speech therapy as "speech impaired", even if such a student is also already categorized in some other special education category.

This absence of a common set of specific handicapping conditions, as well as lack of reliable population parameter benchmarks, hinders development of statistical projections.

Results

The results are organized as follows:

1. Descriptive data from the OCR survey and from the statistics reported by the BIA on the number and percentages of American Indians with handicapping conditions nationally are presented.

2. Projections from sample data to the total population of the total number of American Indians with handicapping conditions nationally are presented.

3. OCR and BIA data by individual states and/or Federal Regions are presented. Both reported and projected data are used.

4. Data comparing ethnic groups are presented, both for the nation as a whole and by individual states.

Descriptive Data from OCR Survey and From BIA Enrollments

Table 1 lists the number of American Indians and the percentage of the total American Indian enrollment in each handicapping condition for the total United States. These numbers were listed in, and the percentages were generated from, the OCR Report. The percentages and numbers are presented graphically in Figure 1.

Table 1

Number of American Indians by Handicapping Condition and Percentage of Total American Indian Enrollment

Disability	n	%
Learning Disabled	7669	5.28
Speech Impaired	3391	2.33
Educable Mentally Retarded	1954	1.34
Seriously Emotionally Disturbed	880	.61
Trainable Mentally Retarded	461	.32

Total American Indians in Sample 145,331

Figure 1

Distribution of Handicapping Conditions Within American Indian Population

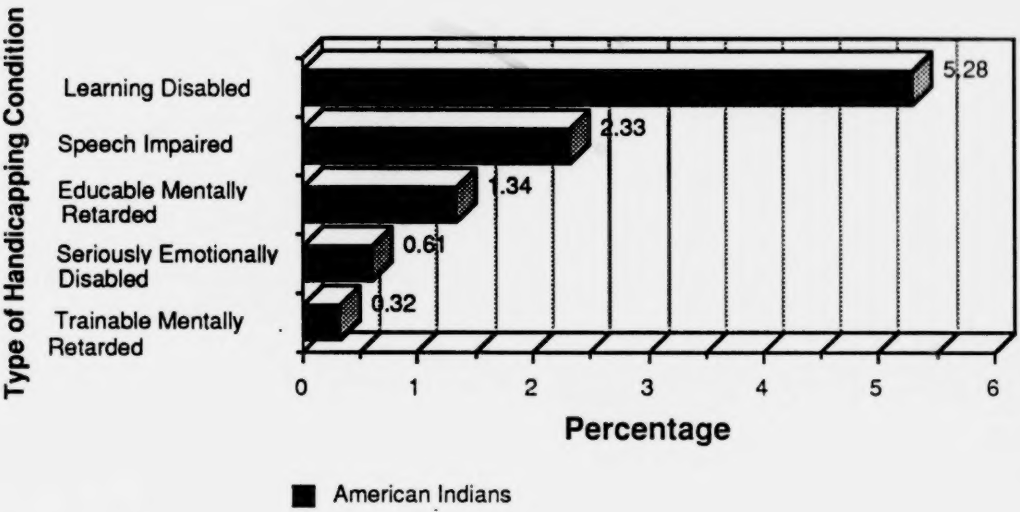


Figure 2 depicts the numbers in each OCR subcategory as a percentage of the total number of special education students in the survey.

Figure 2

Percentage of American Indian Special Education Population by Handicapping Condition within Total American Indian Special Education Sample

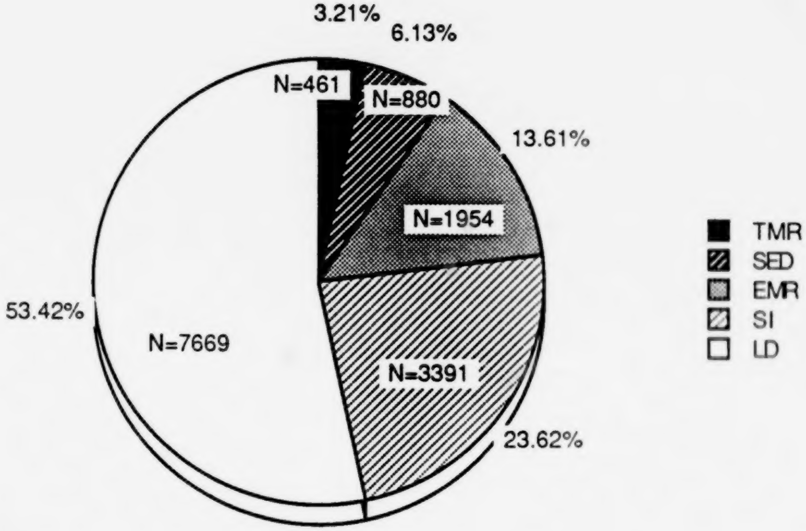


Table 2 lists data for the BIA Schools in the 19 states for which the BIA supplied such data. These numbers involved duplicated counts for students with speech impairments and students in residential placement. The category of residential handicapped has a negligible effect, however, since only 37 students are so categorized. However, the speech impaired category is the second largest in the BIA and, therefore, has a major effect on the data presented in Table 2.

Inspection of Table 2 shows a total of 6,816 special education students enrolled in the BIA schools. However, the BIA advises that there are only approximately 5,400 individual special education students. This difference of more than 1,400 students causes a major revision of the tabled value of 16.89% or 17.42% of all BIA students classified as handicapped to a corrected figure of 13.39% or 13.91% (the lower of these figures is calculated without adding the 209 institutionalized American Indians with handicapping conditions sent from BIA schools to specialized settings, the higher figure takes these students into consideration).

Table 2

Number and Percentage of Total Enrollment in BIA Schools for Each Handicapping Condition

BIA Enrollment	N	%
Full Time		
Deaf	4	.01
Blind	2	.005
Severely Multi-Handicapped	103	.26
Severely/Profoundly Retarded	30	.07
Seriously Emotionally Disturbed	134	.33
Specific Learning Disabled	963	2.39
Mentally Retarded	311	.77
Residential Handicapped	11	.03
Part-Time		
Emotionally Disturbed	129	.32
Specific Learning Disabled	2,553	6.33
Mentally Retarded	77	.19
Multi-Handicapped	52	.13
Hard of Hearing	16	.04
Visually Handicapped	6	.01
Orthopedically Impaired	26	.06
Other Health Impaired	58	.14
Speech Impaired	2,315	5.74
Residential Handicapped	26	.06

Table 2 (Continued)

Number and Percentage of Total Enrollment in BIA Schools for Each Handicapping Condition

BIA Enrollment	N	%
Full-Time/Part Time Combined		
Mentally Retarded	418	1.04
Specific Learning Disabled	3,516	8.72
Seriously Emotionally Disturbed	263	.65
Multi-Handicapped	155	.38
Hearing Impaired	20	.05
Visually Impaired	8	.02
Orthopedically Impaired	26	.06
Other Health Impaired	58	.14
Speech Impaired	2,315	5.74
Residential Handicapped	37	.09
Total Part-Time/Full-Time	6,816	16.89
Total Special Education (including 209 Institutionalized)	7,025	17.42
Total BIA Enrollment	40,322	

The Bureau of Indian Affairs was not able to specify precisely where the duplicated counts occurred. However, they do make P.L. 94-142 counts to the U.S. Department of Education. This data is non-duplicated for all categories. The data as of October 1, 1985, (the year prior to the one studied for this report) indicated the following enrollments in special education:

1.	Learning Disabled	3,057
2.	Speech Impaired	1,250
3.	Mentally Retarded	502
4.	Emotionally Disturbed	257
5.	Hard of Hearing and Deaf	31
6.	Multi-handicapped	195
7.	Orthopedically Impaired	31
8.	Other Health Impaired	28
9.	Visually Handicapped	13
10.	Deaf-blind	0
11.	All conditions	5,364

Comparing this non-duplicated data for 1985 with the duplicated counts for 1986 in Table 2 leads to the conclusion that the bulk of the duplication probably involves the two categories of speech impairment and learning disabilities.

Table 3 is an attempt to provide a comparison of OCR survey percentages for American Indians in each category, BIA percentages in each category, and percentages in each category for the U.S. population as a whole. Not all categories of handicapping conditions list three percentages since the categories in each of the three data sets are not identical. BIA percentages were computed using a total enrollment figure of 40,322; OCR percentages were computed using a total enrollment figure of 145,331 American Indians surveyed. The percentages served in public schools for the U.S. population as a whole during 1984-1985 were computed from numbers in the Eighth Annual Report to Congress (U.S. Department of Education, 1986) and are numbers reported by states. Percentages were calculated using a national enrollment figure of 38,925,000 given in the same report.

Table 3

Comparison of Percentages by Handicapping Condition from OCR, BIA, and U.S. Population Data

Category	BIA %	OCR %	U.S.%
Mentally Retarded	1.04	1.66	1.84
Specific Learning Disabled	8.72	5.28	4.73
Seriously Emotionally Disturbed	.65	.61	.96
Multi-Handicapped	.38		.18
Hearing Impaired	.05		.18
Visually Impaired	.02		.08
Orthopedically Impaired	.06		.15
Other Health Impaired	.14		.18
Speech Impaired	5.74	2.33	2.90
Deaf-Blind			.005
Residential Handicapped	.09		
Total Special Education	16.89	9.88	11.20

Inspection of these tables reveals that when comparing American Indians to the U.S. population at large, a larger percentage of American Indians in some but not all handicapping conditions was found. Categories in which either BIA or OCR data reveals a greater percentage of American Indians than the percentage for the U.S. population at large includes specific learning disabilities in both BIA and OCR data, speech impaired in the BIA data, and multi-handicapped in the BIA data. The most striking disparity is the area of the learning disabilities, where 8.72% of BIA students are classified learning disabled compared to 5.28% of American Indians in the OCR survey of public schools, and 4.73% of the U.S. school population at large.

There is also a disparity between the total percentage of American Indians classified in all of the handicapping conditions by the BIA (16.89%) and the percentage (11.20%) reported for the U.S. school population at large. The figure for the OCR data (9.88%) is not directly comparable since it includes only four handicapping conditions. A more comparable percentage can be calculated by calculating percentages for the U.S. population at large and for the BIA, aggregated across only those four categories also reported in the OCR data (mentally retarded, specific learning disabled, seriously emotionally disturbed, and speech impaired). The percentage for the U.S. population at large is 10.42%, compared to 9.88% for American Indians in the OCR-surveyed public schools, and 16.15% for the BIA schools.

Discussion. There are differing prevalence rates among American Indians in BIA schools, American Indians in public schools, and prevalence rates in the public school population at large. The lower prevalence rates among American Indians in public schools than among the public school population at large found in the OCR survey is unexpected, since the lower socioeconomic status of American Indians, as well as less desirable environmental conditions, would suggest a higher prevalence among American Indians.

Prevalence rates in the BIA were compared with prevalence rates among the school population at large as measured by the OCR survey. It was found that the BIA identifies a higher percentage of students than is identified in the school population at large.

No judgement concerning the appropriateness of these figures and discrepancies can be made, however, since there are no scientifically derived conclusions available concerning the "real" prevalence of these conditions among American Indians..

Inspection of Tables 1, 2, and 3 reveals that the largest part of the discrepancy among the BIA, the OCR, and the school population at large is accounted for by the categories of learning disabilities and speech impairment. These categories may be spuriously high for the BIA, however, since their count in the area of speech impairment is a duplicated count. That is, the BIA counts any student who receives speech therapy as speech impaired, even though that student may also be classified and counted in some other category such as learning disabilities. It does appear, however, that learning disabilities are identified more frequently among American Indians than in the school population at large, and more frequently among children in the BIA schools than among American Indians surveyed for the OCR study (a random sample of public schools located in all 50 states and Washington, DC).

Categories in which the percentage for American Indians in BIA or OCR data is smaller than that for the population at large includes the mentally retarded in both BIA and OCR data, seriously emotionally disturbed in both BIA and OCR data, and hearing impaired, visually impaired, orthopedically impaired, and other health impaired in BIA data. The category of seriously emotionally disturbed in the BIA data is .65% and the OCR data .61% as compared to .95% for the population at large.

The smaller percentages in the BIA data than in the data for the nation at large in the areas of hearing impaired, visually impaired, orthopedically impaired, and other health impaired is also apparent. These are categories in which conditions on the reservation would suggest a higher, rather than a lower, prevalence than in the population at large. For example, it has been reported that among Native Americans, Alaska Natives, and Canadian Eskimos, there is an average prevalence rate of otitis media (caused by frequent middle ear infections and often leading to hearing impairment) of 20 to 70% (McShane and Mitchell, 1979; Northern, 1976). Weit (1979) suggests that otitis media is about fifteen times more common among Native Americans than among Anglos and suggests socioeconomic conditions, medical care, immune deficiencies, and eustachian tube dysfunctions as possible causes for the disparity. Given such estimates, it is unusual to find such low prevalence rates for hearing impairment in BIA schools.

OCR and Other Projections

On the basis of the figures compiled from the OCR survey sample, projections were made by OCR to the entire U.S. population. Projected data was calculated by multiplying the school or district level data elements by the corresponding district's sample weight and then aggregating to the required state or national level. Data reported from districts whose schools were subsampled was first weighted by calculating the total number of actual regular schools divided by the number of subsampled regular schools. Table 4 presents the OCR projections of the total number of American Indians with handicapping conditions in the United States for each handicapping condition, along with the BIA actual counts for each of these same categories.

Table 4

OCR Projected Prevalence of Handicapping Conditions Among American Indians and Actual BIA Counts for Analagous Categories

Category	OCR N	BIA N	Total Proj. N
Educable Mentally Retarded	4,963	77	5,040
Trainable Mentally Retarded	991	311	1,302
Speech Impaired	8,948	2,315	11,263
Seriously Emotionally Disturbed	1,853	263	2,116
Specific Learning Disabled	18,881	3,516	22,397
Total	35,636	6,482	42,118

Examination of these numbers shows that approximately 22,397 learning disabled, 11,263 speech impaired, 5,040 mildly retarded, 1,302 moderately retarded, and 2,116 seriously emotionally disturbed American Indians will be exiting BIA or public schools in the U.S. during the next twelve years.

Table 5 shows frequencies and percentages of other low incidence handicapping conditions among children in BIA schools. These conditions were not counted or projected in the OCR survey. The percentages can be projected from the BIA data to the American Indian enrollment in public schools across the country (projected by OCR to be 364,313). Actual enrollments for these conditions in BIA schools are quite small and projections made from such small numbers are likely to be inaccurate. With these cautions, Table 5 presents BIA frequencies and projections of BIA frequencies to the national American Indian enrollment in public schools for the low incidence handicapping conditions.

Table 5

BIA Enrollments and Projections of BIA Enrollments for Low-Incidence Handicapping Conditions to American Indians Enrolled in Public Schools

Category	BIA N	BIA %	Proj. N
Multi-Handicapped	155	.38	1,384
Hearing Impaired	20	.05	182
Visually Impaired	8	.02	73
Orthopedically Impaired	26	.06	218
Other Health Impaired	58	.14	510
Total	267	.65	2,367

Table 5 provides an indication of the number of American Indians in low incidence handicapping conditions in the U.S. These students will be exiting the school system and in need of rehabilitation services over the next twelve years. By combining totals from Tables 4 and 5, the total number of projected American Indians with handicapping conditions in BIA and in public schools in this country in both high incidence and low incidence handicapping conditions is 44,485 children.

Individual State Data

Table 6 presents the percentage of American Indians in each state and Washington, DC., who were classified into any category of special education treated in the OCR survey. These percentages are obtained by summing over all categories and dividing by each state's total American Indian enrollment in those schools surveyed (Surv. A.I..). This is not to be confused with the total American Indian enrollment in each state. Those figures have been projected by OCR and are also included in Table 6 (Tot. Proj. A.I.). Also presented in Table 6 is a category entitled Total Projected Handicapped American Indians (Tot. Proj. H.A.I.). These numbers were calculated by the authors by adding OCR projections for each state across categories of educable mentally retarded, trainable mentally retarded, speech impaired, and seriously emotionally disturbed.

Table 6

Percentage of American Indians by State Enrolled in Special Education, Number of American Indians Surveyed, Total Projected American Indian Enrollment, and Total Projected Handicapped American Indians

State	%	Surv. A.I.	Tot. Proj. A.I.	Tot. Proj. H.A.I.
Alabama	5.82	2,371	7,740	452
Alaska	13.20	9,982	20,157	2,571
Arizona	9.62	17,187	58,270	4,781
Arkansas	9.29	226	447	40
California	6.40	10,914	27,393	1,616
Colorado	5.42	2,216	2,985	161
Connecticut	2.52	436	1,084	37
Delaware	13.13	99	125	18
D.C.	0.00	34	34	0
Florida	5.29	1,513	1,909	95
Georgia	2.55	275	418	7
Hawaii	4.20	429	432	18
Idaho	12.58	1,613	2,553	295
Illinois	13.25	845	1,556	286
Indiana	1.27	471	1,152	10
Iowa	11.00	673	1,076	124
Kansas	8.40	1,564	3,453	305
Kentucky	5.41	74	106	6
Louisiana	5.05	555	775	37
Maine	15.34	163	320	44
Maryland	9.95	784	806	79
Massachusetts	.59	508	753	2
Michigan	5.39	2,989	1,6575	907
Minnesota	15.23	4,485	9,832	1,972
Mississippi	4.71	191	313	13
Missouri	8.22	304	641	45
Montana	11.81	5,749	21,241	2,662
Nebraska	14.17	1,016	1,482	179
Nevada	8.90	2,145	3,536	348
New Hampshire	7.50	40	55	3
New Jersey	3.95	354	899	37
New Mexico	8.86	14,590	24,057	2,377
New York	5.76	1,111	3,034	119
North Carolina	11.48	14,549	33,468	3,859
North Dakota	15.71	3,265	7,089	1,040
Ohio	3.15	667	1,944	82
Oklahoma	9.59	17295	58,945	6,032
Oregon	11.94	3141	6,346	738
Pennsylvania	12.31	528	1,495	139
Rhode Island	10.32	310	446	61
South Carolina	10.64	329	1,210	179
South Dakota	12.92	3909	7,545	909
Tennessee	11.40	193	301	36

Table 6 (Continued)

Percentage of American Indians by State Enrolled in Special Education, Number of American Indians Surveyed, Total Projected American Indian Enrollment, and Total Projected Handicapped American Indians

State	%	Surv. A.I.	Tot. Proj. A.I.	Tot. Proj. H.A.I.
Texas	6.52	1870	3,561	239
Utah	11.22	2737	4,281	558
Vermont	12.82	39	92	12
Virginia	8.47	602	820	61
Washington	9.34	6,743	13,553	1,203
West Virginia	11.76	51	70	6
Wisconsin	9.13	2,277	6,262	600
Wyoming	13.04	920	1,676	236
Totals		145,331	364,313	35,636

Upon inspection of Table 6, it is apparent that the percentage of American Indians classified as handicapped varies greatly from state to state. This figure varies from a high of 15.71% in North Dakota to lows of .59% in Massachusetts and 0% in Washington, DC. It is also apparent from the actual frequencies of American Indians with handicapping conditions that there are concentrations of American Indian special education students in certain states roughly corresponding to the states with the highest total population of American Indians. There are 28 states who have at least 100 projected American Indians with handicapping conditions. Listed alphabetically, they are the following:

Alabama
Alaska
Arizona
California
Colorado
Idaho
Illinois
Iowa
Kansas
Michigan
Minnesota
Montana
Nebraska
Nevada
New Mexico
New York
North Carolina
North Dakota
Oklahoma
Oregon
Pennsylvania
South Carolina
South Dakota
Texas
Utah
Washington
Wisconsin
Wyoming

Table 7 shows the total number of American Indians with handicapping conditions for the 15 states with at least 500 American Indian special education students. The 15 states are listed from the highest to the lowest number of students.

Table 7

The 15 States Projected to Have At Least 500 Handicapped American Indians in Public Schools

State	N
1. Oklahoma	6,032
2. Arizona	4,781
3. North Carolina	3,859
4. Montana	2,662
5. Alaska	2,571
6. New Mexico	2,377
7. Minnesota	1,972
8. California	1,616
9. Washington	1,203
10. North Dakota	1,040
11. South Dakota	909
12. Michigan	907
13. Oregon	738
14. Wisconsin	600
15. Utah	558
Total	31,825

It can be seen that these 15 states account for almost 90% (89.30%) of all projected American Indians with handicapping conditions in the five OCR categories (EMR, TMR, SI, SED, LD) in the nation's public schools. With the exception of North Carolina, it can be seen that these states are located in the West and Midwest sections of the country.

Table 8 presents the state by state analysis of the BIA enrollment data. (This data permits duplicated counts of students in the speech impaired category.)

Table 8

Percentage of BIA Students Identified as Handicapped and Total BIA Enrollment by State

State	%	Total BIA State Enrollment
Arizona	12.00	12,712
California	3.55	592
Florida	17.00	100
Idaho	26.88	93
Iowa	14.86	74
Maine	13.29	316
Minnesota	42.17	600
Mississippi	23.71	1,126
Montana	21.18	340
New Mexico	16.58	8,693
North Carolina	14.90	946
North Dakota	18.92	3,346
Oklahoma	14.92	590
Oregon	23.52	557
South Dakota	19.83	9,119
Utah	28.89	225
Washington	27.34	267
Wisconsin	36.18	304
Wyoming	16.15	322
Total		40,322

Again, percentages of students identified as handicapped varies greatly by state. Table 3 shows that 16.89% of BIA students nationally are classified as handicapped. However, percentages vary across states from 42.17% in Minnesota to 3.55% in California.

Table 9 presents the percentages of American Indians in each category for each state from the OCR data. These percentages were calculated by dividing the total number of American Indian students found in each category by the total number of American Indian students enrolled in that state.

Table 9

Percentage of American Indians by Handicapping Condition by State and Number of American Indians in Surveyed Schools

State	EMR	TMR	SI	SED	LD	Total A.I. Surveyed
Alabama	1.86	.34	1.81	.17	1.64	2,371
Alaska	.45	.63	3.36	.30	8.47	9,982
Arizona	.86	.42	1.56	1.00	5.78	17,187
Arkansas	.44	0.00	1.33	0.00	7.52	226
California	.30	.07	1.70	.10	4.22	10,914
Colorado	.63	.14	.77	.99	2.89	2,216
Connecticut	0.00	0.00	.69	.69	1.15	436
Delaware	0.00	0.00	2.02	0.00	11.11	99
D.C.	0.00	0.00	0.00	0.00	0.00	34
Florida	.20	.46	1.39	.66	2.58	1,513
Georgia	.36	0.00	1.82	0.00	.36	275
Hawaii	0.00	0.00	.47	.47	3.26	429
Idaho	1.80	.43	2.36	0.00	8.00	1,613
Illinois	.83	.24	3.79	.95	7.46	845
Indiana	.64	0.00	.21	0.00	.42	471
Iowa	2.08	.30	.59	1.34	6.69	673
Kansas	.83	.38	2.37	1.09	3.71	1,564
Kentucky	1.35	0.00	2.70	0.00	1.35	74
Louisiana	.90	.18	1.44	.54	1.98	555
Maine	3.07	.61	3.68	1.23	6.75	163
Maryland	.38	.77	2.04	.64	6.12	784
Massachusetts	.20	0.00	0.00	0.00	.39	508
Michigan	1.10	.13	.97	.37	2.81	2,989
Minnesota	2.45	.45	3.46	2.76	6.11	4,485
Mississippi	.52	.52	2.09	0.00	1.57	191
Missouri	.99	0.00	1.64	.99	4.61	304
Montana	1.04	.38	3.43	.47	6.49	5,749
Nebraska	2.76	.39	3.15	2.07	5.81	1,016
Nevada	.65	.09	1.96	.09	6.11	2,145
New Hampshire	0.00	0.00	0.00	0.00	7.50	40
New Jersey	0.00	.28	.56	1.13	1.98	354
New Mexico	1.14	.25	1.54	.41	5.53	14,590
New York	2.25	.45	.45	.45	2.16	1,111
North Carolina	3.84	.38	2.01	.19	5.07	14,549
North Dakota	1.93	.25	6.09	.89	6.55	3,265
Ohio	.90	0.00	1.20	.30	.75	667
Oklahoma	1.34	.30	3.32	.09	4.53	17,295
Oregon	.35	.35	3.31	.96	6.97	3,141
Pennsylvania	2.65	.19	1.70	.95	6.82	528
Rhode Island	1.29	.32	1.29	0.00	7.42	310
South Carolina	3.34	.30	3.65	.91	2.43	329
South Dakota	2.00	.51	5.55	.51	4.35	3,909
Tennessee	1.04	0.00	2.07	.52	7.77	193
Texas	.37	.21	1.82	.37	3.74	1,870
Utah	1.02	.18	1.68	3.22	5.12	2,737
Vermont	5.13	0.00	2.56	2.56	2.56	39

Table 9 (Continued)

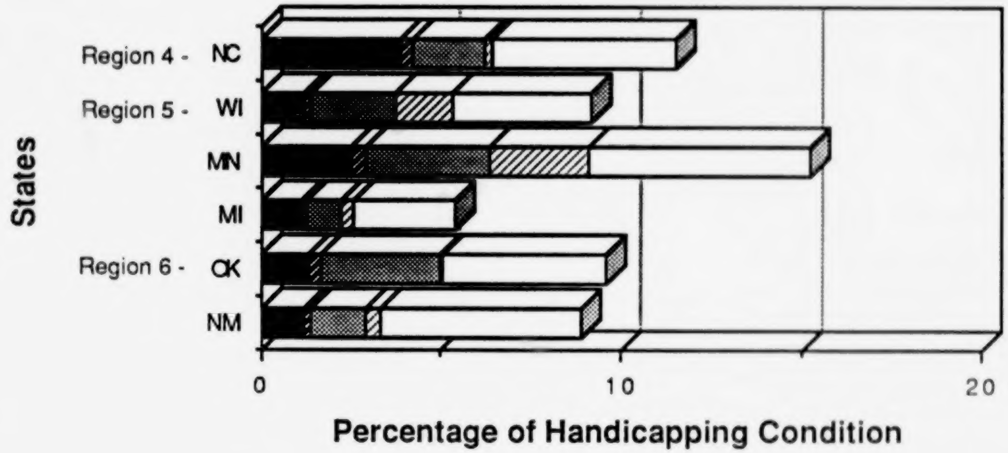
Percentage of American Indians by Handicapping Condition by State and Number of American Indians in Surveyed Schools

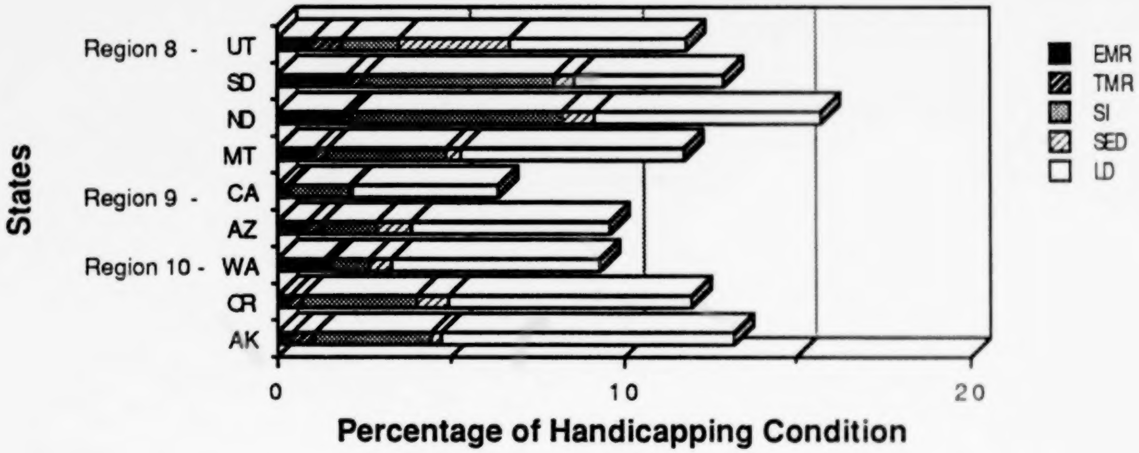
State	EMR	TMR	SI	SED	LD	Total A.I. Surveyed
Virginia	.83	0.00	1.83	.50	5.32	602
Washington	1.33	.22	1.07	.68	6.04	6,743
West Virginia	0.00	1.96	0.00	3.92	5.88	51
Wisconsin	1.19	.18	2.37	1.58	3.82	2,277
Wyoming	.54	.22	2.72	.98	8.59	920

Figure 3 presents this data graphically by selected state and federal region.

Figure 3

Percentage of American Indian Special Education Population for the Top 15 States by Handicapping Condition within Total American Indian Sample





The prevalence rates in the various handicapping conditions vary greatly from state to state. Learning disabilities is the category in which most states have classified the largest percentage of their American Indian students. An unanticipated finding is the extremely small percentage of American Indians classified as educable or trainable mentally retarded in many states. California, for example, classifies only .37% of its American Indians in these two categories. This is somewhat surprising, since the most conservative experts estimate that the prevalence of mental retardation in the United States is at least 1% (Cegelka & Prehm, 1982). It would be reasonable to expect a higher percentage among American Indians given their lower socioeconomic levels. This phenomenon of extremely small percentages in the two categories of EMR and TMR along with extremely high percentages in the LD category can be observed in many, though not all, states.

Appendix B-1 provides a list of the OCR projected numbers of American Indians in each state for each of the handicapping conditions.

Table 10 presents the percentages of BIA students in each of the handicapping conditions by state. The percentages were calculated from data supplied by the BIA. This data allows duplicated counts for students in the categories of speech impaired and residential handicapped.

Table 10

Percentage of Students in BIA Schools in Each State in Each Handicapping Condition and Total Number Enrolled in Each State.

State	% by Category									
	MR	LD	SED	MH	HI	VI	OI	OHI	SI	RH	Tot. En.
AZ	.71	7.58	.40	.52	.04	.02	.02	.15	2.57	1.68	12,712
CA	0.00	3.04	.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	592
FL	1.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100
ID	2.16	16.13	2.16	0.00	0.00	0.00	0.00	0.00	6.45	0.00	93
IA	0.00	6.76	1.35	0.00	0.00	0.00	0.00	0.00	6.76	0.00	74
MS	1.33	11.19	0.00	.44	.18	.09	.18	.09	10.21	0.00	1,126

Table 10 (Continued)

Percentage of Students in BIA Schools in Each State in Each Handicapping Condition and Total Number Enrolled in Each State.

State	% by Category										
	MR	LD	SED	MH	HI	VI	OI	OHI	SI	RH	Tot. En.
ME	2.54	5.70	1.59	.32	0.00	.32	0.00	0.00	2.85	0.00	316
MN	.17	30.83	1.50	0.00	0.00	0.00	0.00	1.83	7.83	0.00	600
MO	.29	11.47	.29	.59	0.00	0.00	0.00	0.00	8.53	0.00	340
NM	1.42	9.56	.41	.67	.07	.04	.09	.05	4.29	.09	8,693
NC	1.80	6.66	.74	.32	.21	0.00	.42	.11	4.65	0.00	946
ND	1.20	5.68	1.35	.30	.03	0.00	0.00	0.00	10.37	0.00	3,346
OK	2.04	8.47	.17	0.00	0.00	0.00	0.00	0.00	4.24	0.00	590
OR	2.69	8.26	.36	.36	0.00	0.00	.18	.90	10.77	.54	557
SD	.86	8.84	.91	.02	.03	0.00	.09	.18	8.92	0.00	9,119
UT	1.33	16.44	.89	0.00	0.00	0.00	0.00	0.00	10.22	0.00	225
WA	2.99	10.49	.75	2.25	.37	0.00	0.00	.37	10.11	0.00	267
WI	.98	17.76	4.60	0.00	0.00	0.00	0.00	0.00	12.83	0.00	304
WY	0.00	8.08	0.00	0.00	0.00	0.00	0.00	0.00	8.07	0.00	322

Appendix B-2 presents the numbers of BIA students in each of the handicapping conditions by state.

Table 11 combines the number of American Indian children with handicapping conditions identified by both the BIA and OCR databases. The projected number of American Indians in each category of handicapping condition was calculated by adding OCR projected frequencies to actual counts supplied by the BIA.

Table 11

Projected Frequency of American Indians by Handicapping Condition by State and Total Projected American Indian Enrollment by State

State	EMR	TMR	SI	SED	LD	Tot. A.I.. Handi.	Tot. A.I. Enrolled
Alabama	140	31	135	13	133	452	7,740
Alaska	115	82	650	55	1,669	2,571	20,157
Arizona	384	263	1,012	558	3,991	6,208	70,982
Arkansas	2	0	8	0	30	40	447
California	51	23	397	33	1,133	1,637	27,985
Colorado	16	3	23	31	88	161	2,985
Connecticut	0	0	6	4	27	37	1,084
Delaware	0	0	5	0	13	18	125
D.C.	0	0	0	0	0	0	34
Florida	4	10	25	11	62	112	2,009
Georgia	1	0	5	0	1	7	418
Hawaii	0	0	2	2	14	18	432
Idaho	46	9	67	2	196	320	2,646

Table 11 (Continued)

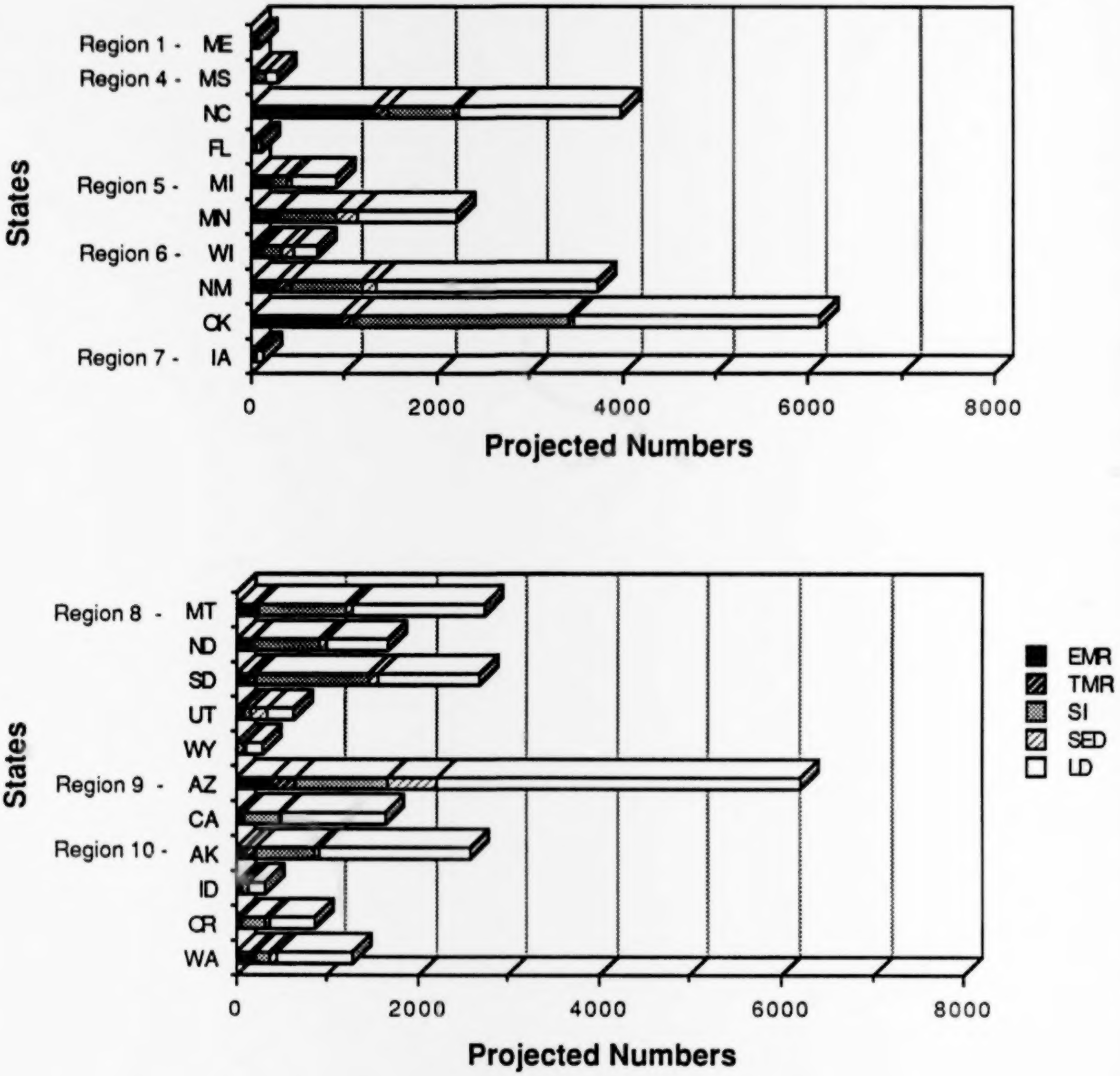
Projected Frequency of American Indians by Handicapping Condition by State and Total Projected American Indian Enrollment by State

State	EMR	TMR	SI	SED	LD	Tot. A.I.. Handi.	Tot. A.I. Enrolled
Illinois	31	2	73	16	164	286	1,556
Indiana	3	0	2	0	5	10	1,152
Iowa	26	2	9	13	85	135	1,150
Kansas	31	10	95	22	147	305	3,453
Kentucky	2	0	2	0	2	6	106
Louisiana	8	1	10	3	15	37	775
Maine	18	5	20	13	28	84	636
Maryland	3	6	16	6	48	79	806
Massachusetts	1	0	0	0	1	2	753
Michigan	222	6	150	57	472	907	16,575
Minnesota	288	28	605	216	1,077	2,214	10,432
Mississippi	3	16	121	0	129	269	1439
Missouri	4	0	9	7	25	45	641
Montana	181	58	964	77	1,452	2,732	21,581
Nebraska	33	4	42	25	75	179	1,482
Nevada	24	2	85	2	235	348	3,536
New Hampshire	0	0	0	0	3	3	55
New Jersey	0	7	6	4	20	37	899
New Mexico	275	168	739	155	2,392	3,729	32,750
New York	25	5	5	20	64	119	3,034
North Carolina	1,323	148	711	60	1,747	3,989	34,414
North Dakota	151	35	714	87	675	1662	10435
Ohio	38	0	37	2	5	82	1,944
Oklahoma	954	151	2,336	29	2,650	6,120	59,535
Oregon	18	30	255	52	506	861	6,903
Pennsylvania	61	1	9	5	63	139	1,495
Rhode Island	8	2	9	0	42	61	446
South Carolina	87	9	39	7	37	179	1,210
South Dakota	123	97	1,236	110	1,109	2,675	16,664
Tennessee	3	0	6	1	26	36	301
Texas	10	18	55	18	138	239	3,561
Utah	59	7	98	174	285	623	4,506
Vermont	3	0	1	4	4	12	92
Virginia	7	0	13	3	38	61	820
Washington	165	31	166	68	838	1,268	13,820
West Virginia	0	1	0	2	3	6	70
Wisconsin	88	29	216	131	246	710	6,566
Wyoming	5	2	74	18	189	288	1,998
Total Proj.	5,040	1,302	11,263	2,116	22,397	42,118	404,635

Figure 4 presents this data graphically by selected state and federal region.

Figure 4

Projected Numbers of American Indian Special Education Students for 21 States by Handicapping Condition



Inspection of Table 11 reveals that a total of 37,906 out of the total of 42,118 American Indians with handicapping conditions in the nation (90%) attend public or BIA schools from the 15 states with an American Indian student enrollment of 500 or more.

However, a limited number of categories of handicapping conditions are portrayed in Table 11 The categories of multi-handicapped, hearing impaired, visually impaired, orthopedically impaired, and other health impaired are not listed, since they were not included in the OCR survey (percentages for these categories in the BIA data are .38, .05, .02, .06, and .14, respectively). Table 5 presented the projections to public schools using the OCR projected American Indian enrollment of 364,313. This resulted in projected enrollment of 2,367 obtained by multiplying each of the above five percentages times 364,313.

It is not possible to make state projections for these low-incidence handicapping conditions by using the BIA percentages for each state, since only 19 states are included in BIA data. It is possible, however, to display national projections.

Table 12 presents total national projections. These projections summarize the totals from Table 11 (OCR projected numbers plus BIA counts) and add calculated projections for low incidence handicapping conditions. These calculated projections for low incidence handicapping conditions were taken from Table 5.

Table 12

Projections of Total Frequency of American Indian Students in All Categories of Special Education in Both Public and BIA Schools

Category	BIA + Proj. OCR N	Proj OCR N	BIA N
Educable Mentally Retarded	5,040		
Trainable Mentally Retarded	1,302		
Speech Impaired	11,263		
Seriously Emotionally Dis.	2,116		
Learning Disabled	22,397		
Multiply Handicapped		1,384	155
Hearing Impaired		182	20
Visually Impaired		73	8
Orthopedically Impaired		218	26
Other Health Impaired		510	58
Totals	42,118 +	2,367 +	267 = 44,752

Table 12 reveals an overall projected prevalence of 44,752 American Indians with handicapping conditions in all categories in all states.

Table 13 lists overall percentages calculated from the data in Table 12. That is, the overall number in each handicapping condition is divided by 44,752.

Table 13

Projected Frequency and Percentage of Total American Indians by Handicapping Conditions

Category	N	% of Total
Educable Mentally Retarded	5,040	11.26
Trainable Mentally Retarded	1,302	2.91
Speech Impaired	11,263	25.17
Seriously Emotionally Disturbed	2,116	4.73
Learning Disabled	22,397	50.05
Multiply Handicapped	1,539	3.44
Hearing Impaired	202	.45
Visually Impaired	81	.18
Orthopedically Impaired	244	.55
Other Health Impaired	568	1.27
	44,752	100.01*

*Sum is greater than 100% due to rounding

Inspection of Table 13 reveals that over 50% of all American Indians with handicapping conditions are classified as learning disabled.

Comparison of 5 Ethnic Groups

In Table 1, we reported the frequency and percentage of total enrolled American Indians for each handicapping condition as reported in the OCR survey. In order to compare the status of American Indians to other ethnic groups, percentages were calculated for 4 additional groups. Table 14 presents these percentages for American Indians, Asians, Hispanics, Blacks, Whites, and the total for all minorities. (All percentages in this table were calculated from the actual OCR survey data, not from OCR projected data).

Table 14

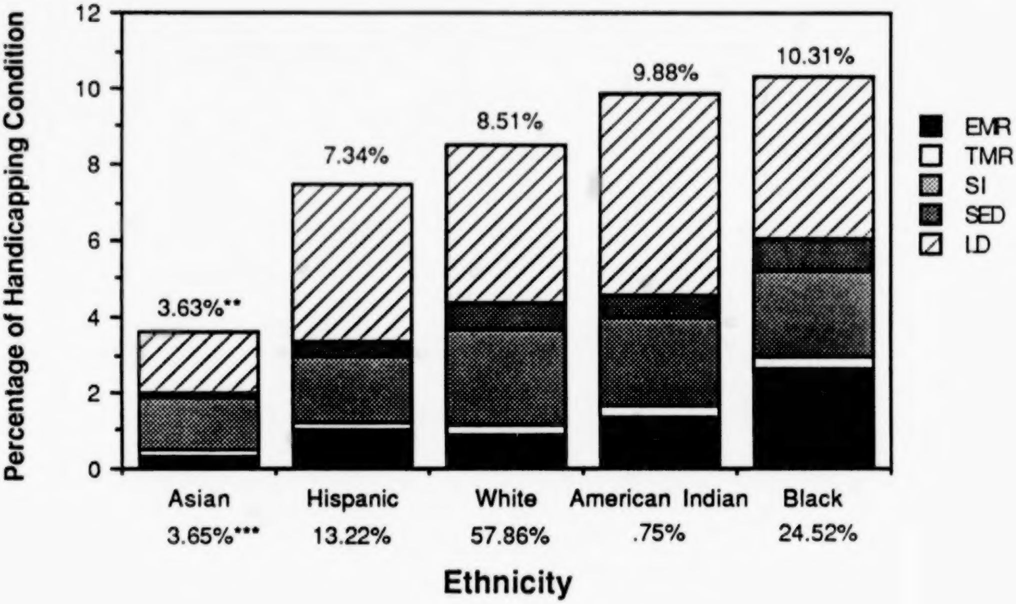
Percentage of Handicapping Condition by Ethnic Minority for All States

Category	Am. Ind. %	Asian %	Hisp. %	Blacks %	Tot.Min. %	White %
EMR	1.34	.33	1.02	2.62	1.90	.92
TMR	.32	.18	.25	.38	.32	.25
SI	2.33	1.34	1.76	2.20	1.99	2.50
SED	.61	.12	.39	.85	.64	.70
LD	5.28	1.66	4.14	4.26	4.01	4.14
Total % Hand.	9.88	3.63	7.56	10.31	8.86	8.51
Total n surveyed	145,331	706,429	2,557,777	4,744,925	8,154,462	11,197,018

Figure 5 presents this data graphically.

Figure 5

Percentage of Special Education Population for 5 Ethnic Categories by Handicapping Condition



**Total percentage handicapped by ethnic category
***Percentages of total survey group by ethnic category

It can be seen from inspection of Table 14 and Figure 5 that American Indians have the highest percentage of students with handicapping conditions of any minority group except Blacks. The learning disability category is the highest disabling condition among American Indians with 5.28% classified in this category, the highest percentage for any category in any group including Whites.

These percentages were calculated only from OCR data and do not include BIA data. However, the total number of BIA students is so small compared to the total number of American Indian students in the nation (9.97%), that their addition would have a negligible effect on the percentages in the table.

For example, Table 12 presented the frequency of handicapped American Indians in each OCR category by adding BIA counts to the projected (not surveyed) OCR numbers. Since OCR projected 364,313 American Indians enrolled in public schools, and the BIA enrolls an additional 40,322 (9.97% of all American Indians), the total combined projected American Indian enrollment is 404,635. Using this figure, the percentage of American Indians calculated from frequencies in each category taken from Table 12 are as follows:

Educable Mentally Retarded............	1.25%
Trainable Mentally Retarded............	0.32%
Speech Impaired.........................	2.78%
Seriously Emotionally Disturbed......	0.52%
Learning Disabled......................	5.54%

It can be seen that these percentages are similar to those calculated from the reported OCR data alone.

Finn (1982) calculated similar percentages using the projected numbers (projected by OCR using weighted formula applied to OCR survey results) from the 1978 OCR survey. Appendix B-3 presents a comparison of these percentages and the percentages calculated from OCR projections of the 1984 data. (It should be emphasized that the 1984 percentages in the table for Appendix B-3 were calculated from projected OCR data alone rather than from a combination of the projected data and BIA counts. This was done in order to ensure that the data displayed for the two different years would be comparable. For this reason, the 1984 percentages in this table do not agree exactly with those found in Table 14). Inspection of this table reveals that all ethnic groups, including Whites, have grown in the percentage of totally enrolled students identified as handicapped within each group. The American Indian category has grown 2.13% since 1978.

Since previous research (Finn, 1982) has shown that trends in prevalence vary by section of the United States, Appendix B-4 through B-8 present data from the OCR survey on percentage of different ethnic groups for each of the handicapping conditions. Inspection of the data tables reveals that prevalence rates vary greatly across ethnic groups, categories of special education, and individual states. Table 15 aggregates the data in Appendices B4-B8 by combining all categories of special education so that the data for each state can be presented in one table.

Table 16 presents percentages of American Indians in special education compared to the percentage of total enrollment for American Indians by state.

Inspection of Table 16 reveals that 23 states have a larger percentage of identified students with handicapping conditions who are American Indians than their respective percentage of total enrollment who are American Indians. Included in these states are eleven of the fifteen states projected by OCR to have at least 500 American Indians with handicapping conditions in public schools. (Together these 15 states account for approximately 90 percent of all projected American Indians with handicapping conditions in public schools). The eleven states are Alaska, Arizona, Minnesota, Montana, North Carolina, North Dakota, Oregon, South Dakota, Utah, Washington, and Wisconsin. Twenty-eight states have identified a lower percentage of students with handicapping conditions who are American Indians than their respective percentages of total enrollment who are American Indians.

Table 15

Percentage of Special Education Students by Ethnic Group in OCR-Reported Handicapping Conditions in American Public Schools

State	N.A	Asian	His.	Black	Min.	White	Total
AL	5.82	2.95	6.76	11.72	11.54	9.18	10.20
AK	13.20	4.75	7.66	14.19	11.79	7.93	8.73
AZ	9.62	4.87	9.37	13.34	9.71	8.67	9.05
AR	9.29	2.77	10.00	12.87	12.58	8.82	10.02
CA	6.40	2.78	6.81	9.45	6.71	7.76	7.11
CO	5.42	3.06	7.49	9.32	7.50	6.58	6.81
CT	2.52	3.80	12.31	14.29	12.92	10.22	11.06
DE	13.13	3.82	15.60	20.72	18.81	11.02	13.63
DC	0.00	0.43	2.88	5.16	5.05	4.51	4.94
FL	5.29	3.99	6.93	12.41	10.53	8.50	9.27
GA	2.55	2.37	5.34	8.87	8.68	8.17	8.40
HI	4.20	6.62	13.86	8.34	6.85	7.52	7.02
ID	12.59	5.89	10.79	12.28	10.44	7.14	7.37
IL	13.25	3.95	5.31	8.82	7.80	9.93	8.54
IN	1.27	4.86	11.01	11.22	10.99	9.21	9.64
IA	11.00	6.15	8.20	14.32	11.33	8.75	8.98
KS	8.38	3.35	6.73	10.94	9.14	7.86	8.11
KY	5.41	5.60	5.74	17.37	16.93	10.29	11.34
LA	5.05	1.35	4.77	9.72	9.37	7.49	8.40
ME	15.34	4.06	9.52	12.90	8.36	9.84	9.89
MD	9.95	3.81	8.63	13.71	12.80	9.81	11.18
MA	0.59	0.90	0.95	0.55	0.73	3.55	2.84
MI	5.39	3.75	6.06	6.35	6.28	7.93	7.16
MN	15.23	5.72	14.61	16.03	12.69	9.52	9.88
MS	4.21	3.31	4.88	10.02	9.99	8.59	9.39
MO	8.22	3.77	7.35	12.24	11.85	10.77	11.16
MT	11.81	4.42	11.89	10.68	11.23	7.81	8.13
NE	14.17	4.21	11.10	16.51	14.28	10.07	10.60
NV	8.90	4.58	7.44	14.53	10.68	6.71	7.59
NH	7.50	3.79	15.37	14.94	11.21	9.60	9.64
NJ	3.95	4.24	7.71	9.32	8.55	9.39	8.94
NM	8.86	4.41	10.27	13.69	10.14	8.09	9.19
NY	5.76	1.40	7.89	8.83	7.89	5.51	7.14
NC	11.48	3.30	4.66	13.05	12.67	7.66	9.49
ND	15.71	8.52	14.18	13.70	14.40	9.32	9.68
OH	3.15	3.97	6.91	7.67	7.54	8.62	8.21
OK	9.59	3.48	8.10	14.04	11.69	10.12	10.56
OR	11.94	3.59	10.54	12.86	9.20	8.81	8.85

Table 15 (Continued)

Percentage of Special Education Students by Ethnic Group in All Handicapping Conditions in American Public Schools

State	N.A	Asian	His.	Black	Min.	White	Total
PA	12.31	2.88	11.05	11.59	11.16	8.90	9.78
RI	10.32	3.33	7.17	14.99	10.43	12.59	12.29
SC	10.64	3.94	5.84	13.65	13.46	8.82	10.83
SD	12.92	9.21	8.85	11.42	12.05	8.90	9.14
TN	11.40	3.24	5.31	9.99	9.82	10.02	9.96
TX	6.52	2.09	7.84	8.82	7.94	7.84	7.90
UT	11.22	5.30	11.95	14.34	10.20	8.70	8.80
VT	12.82	6.06	12.12	7.58	7.76	9.79	9.76
VA	8.47	4.03	8.12	10.83	9.93	8.90	9.21
WA	9.34	3.22	8.01	13.28	8.19	7.36	7.51
WV	11.76	3.95	5.98	11.30	10.66	10.24	10.27
WI	9.13	2.91	7.54	10.78	9.79	8.27	8.67
WY	13.04	8.59	12.35	17.62	12.73	9.59	9.90

* All minority groups combined.
**Total for all ethnic groups.

Table 16

Percentage of Total American Indian Special Education Enrollment by State and Percentages of Total American Indian Enrollment

State	% Handicapped	% Total Enrollment
Alabama	0.33	0.58
Alaska	17.98	11.90
Arizona	05.42	05.10
Arkansas	0.11	0.12
California	0.43	0.48
Colorado	0.52	0.66
Connecticut	0.04	0.16
Delaware	0.12	0.12
Dist. of Columbia	0.00	0.04
Florida	0.08	0.14
Georgia	0.02	0.05
Hawaii	0.15	0.25
Idaho	2.27	1.33
Illinois	0.18	0.12

Table 16 (Continued)

Percentage of Total American Indian Special Education Enrollment by State and Percentages of Total American Indian Enrollment

State	% Handicapped	% Total Enrollment
Indiana	0.01	0.11
Iowa	0.53	0.43
Kansas	0.74	0.72
Kentucky	0.01	0.03
Louisiana	0.06	0.12
Maine	0.25	0.16
Maryland	0.16	0.18
Massachusetts	0.04	0.18
Michigan	0.44	0.59
Minnesota	2.34	1.52
Mississippi	0.04	0.09
Missouri	0.08	0.12
Montana	9.93	6.84
Nebraska	0.89	0.66
Nevada	1.88	1.61
New Hampshire	0.04	0.05
New Jersey	0.03	0.07
New Mexico	7.44	7.72
New York	0.08	0.10
North Carolina	2.86	2.36
North Dakota	7.82	4.82
Ohio	0.05	0.12
Oklahoma	6.52	7.17
Oregon	1.68	1.25
Pennsylvania	0.12	0.10
Rhode Island	0.24	0.29
South Carolina	0.08	0.08
South Dakota	7.83	5.54
Tennessee	0.05	0.04
Texas	0.11	0.13
Utah	1.06	0.83
Vermont	0.11	0.09
Virginia	0.09	0.10
Washington	2.23	1.79
West Virginia	0.03	0.02
Wisconsin	0.93	0.88
Wyoming	1.73	1.31

Summary and Conclusions

The primary purpose of this study was to determine prevalence rates of handicapping conditions among American Indian students in order to provide information relative to the future rehabilitation needs of adults from this minority population. A secondary goal was to compare prevalence rates of American Indian students identified as handicapped with prevalence rates for other minority groups, for Whites, and for the school population at large. This data would help determine how future rehabilitation needs for American Indians compare with such needs for other minorities and for Whites.

Secondary data from the Office of Civil Rights was used for the analysis. Data on American Indians attending Bureau of Indian Affairs (BIA) schools was also secured, since 40,322 American Indian students attend these schools. Officials from the BIA agreed to reorganize their school-level special education data and aggregate by state. This was necessary in order to make the data comparable to and consistent with the state-level OCR survey data.

For the nation as a whole, it was found that the category of learning disabilities is the largest for American Indians in both public schools (5.28% of American Indians) and in BIA schools (8.72% of enrollment). It was also found that compared to the population as a whole, there is a larger percentage of American Indian students classified as handicapped in some but not all handicapping conditions. Categories in which either BIA or OCR data reveals a greater percentage of American Indians than the percentage of the population as a whole includes specific learning disabilities in both BIA and OCR data, speech impairment in the BIA data, and multi-handicaps in the BIA data.

Categories in which the percentage for American Indians in BIA or OCR data is smaller than that for the population at large includes the mentally retarded in both BIA and OCR data, seriously emotionally disturbed in both BIA and OCR data, and hearing impaired, visually impaired, orthopedically impaired, and other health impaired in BIA data.

Evidence from the present study does indicate that learning disabilities are identified more frequently among Americans Indians than in the school population at large, and more frequently in BIA schools than in public schools. The OCR study used a weighted formula to project survey results to the nation as a whole and to individual states. By adding BIA counts to these projections, some indication of numbers in each category sampled by OCR can be obtained. It is further possible to project the BIA numbers in the categories of handicap not dealt with by OCR to public schools. These projections were calculated by the authors of this study and produced the following numbers: learning disabled - 22,397; speech impaired - 11,263; mildly retarded - 5,040; moderately retarded - 1,302; seriously emotionally disturbed - 2,116; multi-handicapped - 1,539; hearing impaired - 202; visually impaired - 81; orthopedically impaired - 244; other health impaired - 568; total - 44,752 (See Tables 12 and 13).

Prevalence rates vary greatly from state to state. (See Table 11 for projections of the OCR categories to individual states.) As previously stated, learning disabilities is the largest category among American Indians. In fact, Table 13 shows that over 50 percent of all of our projected handicapped American Indians are classified as learning disabled.

Fifteen states are projected by OCR to have at least 500 American Indians with handicapping conditions in the five categories included in their survey. These states are Oklahoma, Arizona, North Carolina, Montana, Alaska, New Mexico, Minnesota, California, Washington, North Dakota, South Dakota, Michigan, Oregon, Wisconsin, and Utah. Together these states are projected to have 31,825 of the 35,636 American Indians projected to be handicapped in the nation (these numbers calculated by OCR do not include BIA students with handicaps or students in the other handicapping conditions not dealt with in the OCR survey). Thus, these 15 states account for nearly 90 percent of all projected American Indians with handicapping conditions in the country.

Five of the Federal Regions have the majority of American Indians with handicapping conditions projected by OCR. These regions are Region IV (N=4,647); Region VI (N=8,725); Region VIII (N=5,566); Region IX (N=6,763); and Region X (N=4,807). Thus, these five regions contain nearly 86% (N=30,508) of all OCR projected American

Indians with handicapping conditions (N=35,636). Other regions are Region I (N=159); Region II (N=156); Region III (N=303); Region V (N=3,857); and Region VII (N=653). These totals do not include BIA figures, nor do they include any of the handicapping conditions other than those included in the OCR survey. These OCR categories are educable mentally retarded, trainable mentally retarded, speech impaired, seriously emotionally disturbed, and specific learning disabled. When the BIA enrollments and other projections for handicapping conditions not included in the OCR survey are included, the total number of American Indians with handicapping conditions was increased by nearly 10,000 students, from 35,636 to 44,752 (see Table 12). Figure 4 presents a graphic representation of projections including both OCR figures and BIA enrollments in selected states and regions. When OCR and BIA numbers for the five handicapping conditions are combined, the same 15 states are seen to have 500 or more American Indians with handicapping conditions. These 15 states have a total of 37,906 American Indians with handicapping conditions out of the new total of 42,118 (90%).

Analysis of the OCR data further revealed that the percentages of American Indians classified as handicapped varies greatly from state to state (15.71% in North Dakota to .59% in Massachusetts). The same is true when the BIA data is analyzed by state. For example, in Minnesota, 42.17% of students enrolled in BIA schools are identified as handicapped, while California has only 3.55% of BIA enrolled students identified.

The OCR data was also analyzed by ethnic category. The OCR published both reported and projected data for all five areas of handicapping conditions for American Indians, Asians, Hispanics, Blacks, total minorities, and Whites. Table 14 shows that American Indians have the highest percentage of handicapped students of any minority group other than Blacks. The learning disability category is the highest among American Indians with 5.28% classified in this category, the highest percentage for any category in any group including Whites.

OCR projected data on handicapping conditions by ethnicity was then compared with similar data from the 1978 OCR survey. Appendix B-3 presents this data. All ethnic categories have shown increases since 1978, including Whites. The American Indian category has grown 2.13%. Appendices B-4 through B-8 and Table 15 present the data on ethnicity broken down by individual state. Examination of these tables shows that most states have a higher percentage of their total special education enrollment made up of students from minority groups than their respective total minority enrollment percentage.

Twenty-three states have a larger percentage of identified students with handicapping conditions who are American Indians than their respective percentages of total enrollment who are American Indians. Included in these states are eleven of the fifteen states projected by OCR to have at least 500 American Indians with handicapping conditions in public schools. These states are Alaska, Arizona, Minnesota, Montana, North Carolina, North Dakota, Oregon, South Dakota, Utah, Washington, and Wisconsin. Again, this is to be anticipated. The remaining 28 states have identified a lower percentage of handicapped students who are American Indians than their respective percentages of total enrollment who are American Indians.

SECTION III

ANALYSIS OF THE INCIDENCE OF DISABILITY AMONG AMERICAN INDIANS: HEALTH-RELATED DATA

ANALYSIS OF THE INCIDENCE OF DISABILITY AMONG AMERICAN INDIANS: HEALTH-RELATED DATA

The measurement of the incidence of disability is very difficult. Primary data based upon a clinical evaluation of the American Indian population or a broad-based sample of that population does not exist. Data from the 1980 U.S. Census indicated that working age American Indians reported work-related disability at almost one and one half times the rate for the general population, and at a rate higher than that for any other minority group (U.S. Bureau of the Census, 1983). This data is self-reported, however, and does not provide any detail regarding the type of disability. Epidemiologically valid data on American Indians are available for selected disability types and restricted geographical areas. These studies are for the most part restricted to disease or disability categories for which American Indians of a particular region are thought to have an abnormally high incidence.

While this type of data provides important insights into the incidence and prevalence of specific disabilities among American Indians, it is not sufficiently complete either geographically or across disability types to provide a comprehensive analysis. Thus, any comprehensive incidence measures used must rely upon secondary data. Secondary data available from agencies providing services to individuals with disabilities measure *treated* incidence, but cannot address the issue of the extent to which persons with disabilities fail to receive services. The completeness of treated incidence data does vary significantly across agencies and types of data, however. Data from the U.S. Department of Health and Human Services, Indian Health Service (IHS), provide perhaps the most complete or comprehensive available measure of the adult population with disabilities among American Indians, since many individuals may receive medical treatment through IHS for conditions which are disabling without seeking rehabilitation services through other agencies such as RSA. Serious medical problems may often necessitate rehabilitative interventions, and familiarity with IHS facilities and procedures for accessing services is more widespread within the American Indian population than is familiarity with other agencies serving individuals with disabilities. Because of the relative comprehensiveness of IHS services, the analysis in this section will focus primarily upon IHS data. However, summary national and regional data from other sources will be presented when appropriate.

The purpose of this section is to describe the incidence of disease conditions among American Indians and project their rehabilitation needs based on the nature and extent of their health-related problems. National and regional IHS data was analyzed and compared to data from the general population as supplied by the U.S. Bureau of Health Statistics. The health problems of the American Indian, as identified by inpatient hospitalization data, was then compared to RSA national data on American Indian VR clients to determine the congruency between the type of health problems identified through IHS and the type of rehabilitation conditions served by RSA.

This report characterizes the treated incidence of health-related problems among American Indians and projects their rehabilitation needs. Because of the high degree of variance across federal regions and within states on the exact nature of the health problems, information is provided by federal region. In addition, because the demographic characteristics of the American Indian are different from that of the general U.S. population, the data is presented by age and sex, and compared to all other races in order to more completely understand the problems and needs.

Source of Data

Four major types of data from the IHS system are of interest here: (1) death rate data by cause of death, (2) inpatient hospitalization data by diagnostic category, (3) ambulatory care data, and (4) pediatric registry data. Each of these types of data provides only an indirect measure of the incidence of disability. Death rate data can be correlated to disability only to the extent that the number of living persons exhibiting a given condition can be assumed to be proportional to the number of persons dying from that cause. Many types of disabling conditions may never or only rarely be a direct cause of death. Hospitalization and ambulatory care diagnostic data are oriented toward the medical cause of the problem and do not directly address whether or not the condition described is likely to be accompanied by a disability requiring rehabilitation. Also some types of disabling conditions, such as mental retardation, may not require any medical treatment.

Because of limitations in the degree of diagnostic detail and in the consistency of reported ambulatory care data from IHS are not analyzed here. Pediatric registry data provide a relatively direct measure of the prevalence of many disabling conditions, since congenital or chronic disorders that would likely be disabling are recorded. Only a restricted age range is covered, however, in the pediatric registries. In addition, pediatric registry data is not collected nationally by IHS, and it is not reported under a fully consistent set of criteria by the various IHS areas. Because of these limitations, pediatric registry data are presented only for a selected group of IHS areas.

Each of the IHS data sources used in this study has advantages and disadvantages. The problem of an untreated and thus unmeasured population is largely avoided in death rate data since all deaths must be recorded. However, death rate by cause of death is a very indirect proxy measure for the incidence of disability. The hospitalization data provides more comprehensive data, there are many more hospitalizations per year than deaths, and hospitalizations occur with diagnoses which are rarely direct causes of death. In addition, hospitalization data is a somewhat more direct measure of disability incidence since living discharged patients with a given diagnosis could represent individuals with a disabling condition.

IHS death rate data can provide a general overview of the health problems of American Indians, but cannot provide much detail with regard to cause of death due to the limited number of individuals in the data pool. American Indian death rate data will be given a frame of reference by examining American Indian rates in comparison to death rates for the U.S. population as a whole. Age-specific and age-adjusted rates will be used wherever possible.

Analysis of IHS inpatient hospitalization data requires extensive transformation. The first step in providing meaningful disability-oriented data from the IHS inpatient hospitalization database is to organize the data into disability-oriented categories. This requires the matching of International Classification of Diseases (ICD) categories into a disability-oriented classification scheme. Because of the level of detail afforded and the desire to ultimately compare IHS hospitalization data with RSA rehabilitation data, RSA's major disability codes have been used as the source for this reclassification. A preliminary scheme for deriving disability-oriented disease categories and matching ICD codes with RSA codes was developed by the investigators and was reviewed by medical records experts in the IHS system. This classification scheme has been used to generate the categories used in several of the tables in this section, and is presented in Appendix C-1.

The incidence measures based on this classification scheme can be made more meaningful by providing a frame of reference. This is done by applying the same classification scheme to general population data from the National Short Stay Hospitalization survey conducted by the U.S. Bureau of Health Statistics (1986). Results from the IHS data can thus be compared to general population results across the various categories. The relative incidence of various diagnostic conditions across IHS regions and states will also be compared so that regional differences can be noted and considered when formulating government policies to address the problems. IHS data for the fiscal years 1984-86 and general population survey data for the calendar year 1985 are utilized for this analysis.

Analysis of pediatric registry data is limited by the lack of national reporting of this data and the lack of comprehensive comparable figures for the general population. Because of these limitations pediatric registry data are presented only for three selected IHS areas: (1) Navajo, (2) Billings, and (3) Alaska. These regions were selected on the basis of accessibility to the investigator and based on the knowledge that pediatric registry data were available for these areas. In order to supplement the national data the analysis of the incidence of disability within these three regions also included an analysis of several other data sources. The additional data for these areas is presented in order to provide a better understanding of the degree of similarity or divergence in the patterns of disability across areas and in the types of data available across areas.

Another important limitation of the IHS data described above is the fact that it does not cover California,the state with the single largest American Indian population. To address this problem a separate report focuses specifically on disabled American Indians in California. Data for this report were obtained from the U.S. Bureau of the Census, the State of California Health Department, the Indian Health Service, and rural and urban Indian health care programs.

Finally, it is appropriate to examine the extent to which American Indian people who are disabled are receiving vocational rehabilitation services. A comparison of the IHS inpatient diagnostic data with the distribution of RSA's American Indian case load by disability type can indicate the extent to which RSA's client base corresponds to the distribution of disabilities indicated by hospitalization data.

Limitations. There are several important limitations of the IHS data. First, the inpatient hospitalization data uses diagnostic classes based upon the ICD diagnostic categories, and these are not disability-oriented. A given ICD category may nearly always indicate a disabling condition, may very rarely indicate a disabling condition, or may be somewhere in between. Thus, ICD categories can at best describe a pool of individuals whose poor health status may result in a disabling condition. However, ICD code data must be regrouped into disability-oriented categories in order to use ICD categorical data to project the rehabilitation needs of American Indians. A second limitation is the fact that the IHS inpatient data does not provide an unduplicated count of clients exhibiting the conditions documented by the ICD diagnostic categories. A person hospitalized more than once with the same diagnosis will be counted more than once. A similar type of problem is present in the pediatric registry data, in that one child may have several recordable conditions and that child will appear in the count for each of those conditions.

Another limitation is the fact that IHS does not provide service to all American Indians nationwide. The IHS service area contains only about two thirds of the total U.S. American Indian population and generally does not include American Indians residing in urban areas. In addition, national IHS data sources do not include data for California, which is the state with the single largest American Indian population. Thus, the health status and disability status of a significant portion of the American Indian population is not covered by this data source. A final limitation which applies to data from any service agency is the fact that the data may reflect characteristics of the supply of services as well as the demand for them. That is, the diagnosis and treatment of a given classification of disease might tend to increase as the expertise of providers in treating that particular disease increases, while diagnosis of disease with which providers have less familiarity might tend to be lower.

Results

The results will be organized in the following manner. First, IHS death rate data will be presented. Second, IHS inpatient hospitalization data are presented and analyzed. IHS hospitalization and RSA rehabilitation data are then compared by type of disability. Regional data for the three selected IHS areas are then presented, first focusing on pediatric registry data, and then presenting an overview of additional disability data for these regions.

IHS Death Rate Data

American Indian mortality data provide important indications about the incidence and prevalence of disability among this group. The greatest strength of mortality data is its virtually universal coverage. Whereas client data from agencies serving persons with disabilities does not capture those individuals who may have qualifying disabilities but fail to seek services, all deaths are reported and a cause of death is listed. While individual cause of death designations are subject to error, there is reason to believe that the population mortality statistics are complete and accurate.

The major weakness of the mortality data is the fact that it does not provide a direct measure of the number of living persons with disabling conditions. In order to infer characteristics of the disabled population from mortality data, we must assume that there is a relationship between the proportion of a population dying from a given disorder, and the proportion of the population which is disabled by that disorder. While it seems plausible to assume a positive relationship between deaths due to a disorder and persons disabled due to that disorder, the correlation need not be perfect. For instance, the death rate due to accidents among American Indians is very high; however, one reason for the high death rate may be the fact that many American Indians reside in rural areas remote from emergency medical services. In addition, poor road conditions, unsafe vehicles, and geographic isolation may increase the probability of a fatal injury to automobile passengers relative to the probability of a nonfatal injury.

In addition, death rate data does not provide a comprehensive view across all disability types. Many disabling conditions may not be direct causes of death or may be the cause of death only in very rare instances. This fact coupled with the relatively modest size of the American Indian population limits disability-oriented examination of death rate data to those types of disease associated with the leading causes of death.

Another limitation of the mortality data presented here is the fact that only deaths among American Indians living in areas served by the Indian Health Service are included in the American Indian mortality data. All of the data presented here is derived from Indian

Health Service reports.

Death rate as a measure of overall health status. Mortality data has frequently been used as a proxy measure of the overall health status of American Indians. Highly aggregate measures such as life expectancy at birth can give a crude indication of relative health status, but age-specific mortality rates provide a much richer view. The American Indian and U.S. death rate data presented here are taken from a recent IHS report (IHS, 1986). The life expectancy at birth of American Indians was 71.1 years in 1980 compared to 74.4 for the U.S. White population, a difference of less than 5 percent. However, a much larger proportion of American Indian deaths are among individuals under the age of 45. Thirty-seven percent of American Indian deaths as opposed to only 10 percent of White deaths and 21 percent of Black deaths occurred under the age of 45. This is caused by the fact that American Indians have a very atypical pattern of age-specific death rates. As Table 1 and Figure 1 indicate, American Indian mortality rates are substantially higher than the parallel All Races rates for all age groups up to age 55, while the American Indian mortality rate is substantially lower than that for All Races in all age categories over 65 years. Thus, American Indians are substantially less likely to survive to age 55, but those who do survive to age 55 have a significantly longer life expectancy than do surviving 55 year olds from other races. American Indian mortality rates are particularly high relative to other races for ages 15 through 44. American Indians are almost twice as likely to die between the ages of 15-44 years than individuals from other races.

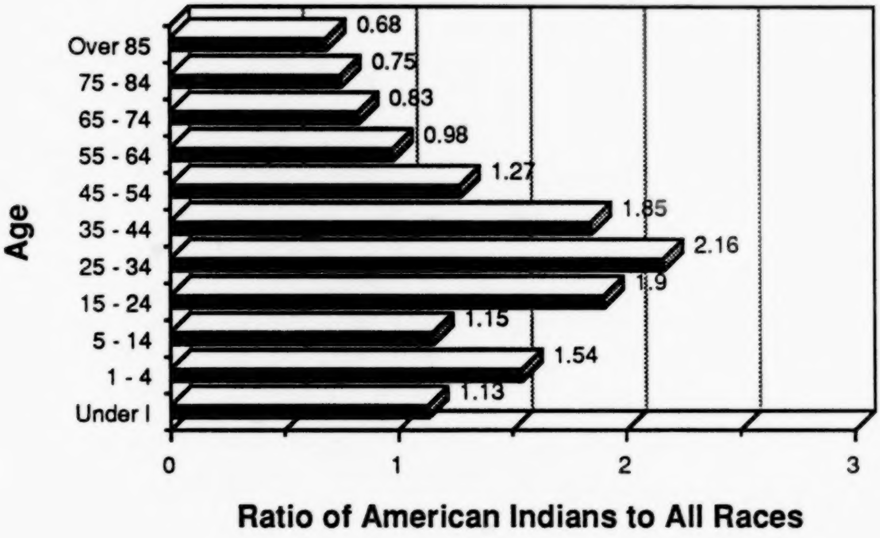
Table 1

Age-Specific Death Rates for American Indians Versus All Races (Rates Per 100,000 Population)

Age	American Indian	All Races	Ratio A.I./All Races	White	Ratio A.I./White
Under 1	1,311.1	1,164.2	1.13	1,018.5	1.29
1 - 4	88.5	57.6	1.54	52.8	1.68
5 - 14	32.5	28.3	1.15	27.0	1.20
15 - 24	192.3	101.0	1.90	98.3	1.96
25 - 34	270.0	125.2	2.16	110.2	2.45
35 - 44	383.0	207.4	1.85	182.7	2.10
45 - 54	699.6	549.7	1.27	504.0	1.39
55 - 64	1,270.8	1,297.9	.98	1,233.3	1.03
65 - 74	2,406.3	2,885.2	.83	2,822.3	.85
75 - 84	4,754.2	6,329.8	.75	6,329.8	.75
Over 85	10,194.9	15,048.3	.68	15,296.9	.67
Age Adj. Rate	562.1	550.5	1.02	528.0	1.06

Figure 1

Age-Specific Death Rates as a Ratio of American Indians to All Races



The large numbers of deaths at early ages among the American Indian population has important implications with respect to disability. Persons with disabilities on the average live shorter lives than individuals who are not disabled, and individuals dying at a relatively early age are more likely to have had disabilities and to have had disabilities over a longer period of time than individuals dying at a later age. This is particularly true if one focuses on disabilities experienced during the working years (which would be relevant from the standpoint of vocational rehabilitation programs).

One measure which gives added weight to deaths at an early age is the average number of years of life lost due to deaths through a given age. This measure is computed by starting with a hypothetical cohort of 100,000 babies born and applying the appropriate death rates as this group is aged through the cohort-survival method. For a child dying before age one, one year of lost life is counted for each year beyond the first, for an individual dying at age 45 one year of lost life is counted for age 46 and each succeeding year, and so on. Table 2 indicates that the number of years of life lost per 100,000 population is considerably higher for American Indians than for Whites and for all races through all ages up to 85. The differential hits its peak around ages 45 to 55. Years of American Indians' lives lost through these ages are roughly 1.7 times the years of life lost for Whites and 1.5 times the years of life lost for All Races. Years of American Indian lives lost through age 65 remain almost 60 percent higher than the parallel figure for Whites and 45 percent higher than the All Races figure. Relatively low death rates for American Indians beyond age 65 cause the ratios to fall to 1.18 times the level for Whites and 1.12 times the All Races level by age 85.

Table 2

Years of Life Lost Per 100,000 Population by Age for American Indians Versus All Races

Age	American Indian	All Races	Ratio A.I./All Races	White	Ratio A.I./White
Under 5	5,768	4,998	1.15	4,387	1.31
5 - 9	14,387	12,235	1.18	11,790	1.22
10 - 14	23,805	20,170	1.18	17,860	1.33
15 - 19	35,582	29,514	1.12	26,296	1.35
20 - 24	52,035	41,330	1.26	37,143	1.40
25 - 29	73,864	55,843	1.32	50,506	1.46
30 - 34	102,113	73,386	1.39	66,544	1.53
35 - 39	137,764	94,731	1.45	85,940	1.60
40 - 44	182,205	121,018	1.51	109,711	1.66
45 - 49	238,142	155,396	1.53	140,838	1.69
50 - 54	309,396	202,432	1.53	183,663	1.68
55 - 59	400,141	268,326	1.49	244,348	1.64
60 - 64	516,237	361,669	1.43	661,463	1.56
65 - 69	644,200	492,627	1.35	455,553	1.46
70 - 74	852,527	673,839	1.27	629,779	1.35
75 - 79	1,089,242	916,772	1.19	866,557	1.26
80 - 84	1,382,867	1,231,397	1.12	1,176,737	1.18

Death rates by cause of death . The leading causes of death among American Indians provide important insights as to why such a large number of American Indians die at an early age, and give some clear indications about the nature of disability in the American Indian population. Table 3 and Figure 2 provide age-adjusted mortality rates by major cause of death category. Note that the two major categories for which the American Indian mortality rate is lower than that for All Races, cardiovascular diseases and cancer, are diseases which tend to cause death at relatively advanced ages, while several of the causes of death whose rates are particularly high among American Indians tend predominantly to cause deaths at relatively early ages. The categories of accidents, chronic liver disease, homicide, and suicide all can be thought of as being in some sense behavior related, and all are categories in which deaths tend to occur at relatively young ages. In addition alcoholism is a major factor contributing to deaths in all of these categories. American Indians are also substantially more likely than other races to die due to pneumonia and influenza, diabetes mellitus, and tuberculosis. The high death rate for pneumonia and influenza can be related to the remoteness and poor socio-economic conditions under which many Indian people live.

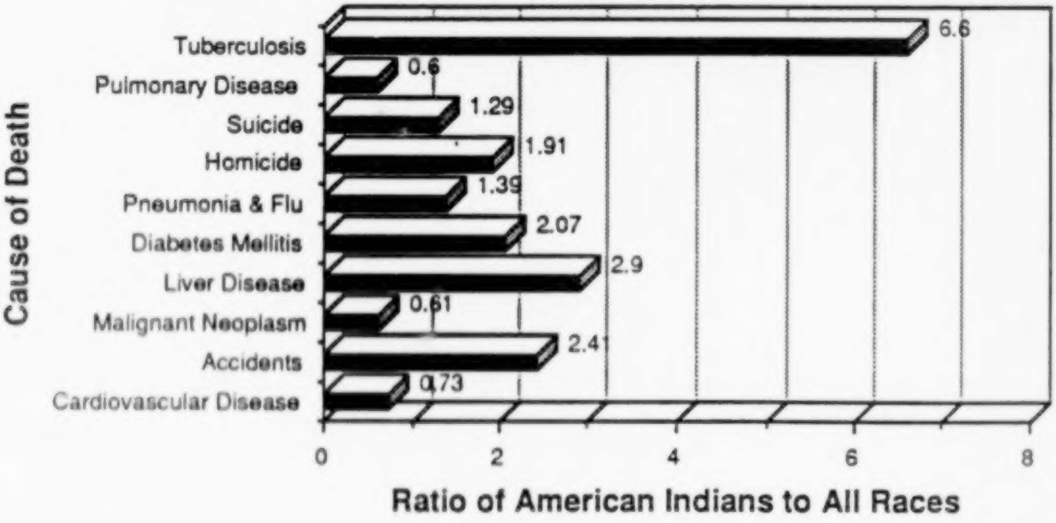
Table 3

Age-Adjusted Death Rates From Selected Causes for American Indians Compared To U.S. All Races (Rates Per 100,000 Population)

Cause of Death	American Indian	All Races	Ratio A.I./All Races
Major Cardiovascular Diseases	170.9	235.0	.73
Accidents/Adverse Effects	82.9	34.4	2.41
Malignant Neoplasms	81.4	132.6	.61
Liver Disease/Cirrhosis	29.6	10.2	2.90
Diabetes Mellitis	20.5	9.9	2.07
Pneumonia and Influenza	16.40	11.80	1.39
Homocide	16.4	8.6	1.91
Suicide	14.7	11.4	1.29
Chronic Pulmonary Disease	10.4	17.4	.60
Tuberculosis	3.3	.5	6.60

Figure 2

Death Rates for Leading Causes as a Ratio of American Indians to All Races



Death rates by age group for accidents, alcoholism, homicide and suicide are presented in Table 4 and Figure 3. The alcoholism category includes deaths due to alcohol dependence, alcohol psychoses, and chronic liver disease or cirrhosis specified as alcoholism. For each of the categories other than accidents the peak death rate occurs at less than 65 years of age for All Races and at less than 55 years of age for American Indians. For accidents, the highest death rates are in the age categories beyond 75 years of age, due to a dramatic increase in nonvehicular accidents among these older age groups. Accidents remain a very major cause of death among younger age groups, however.

Table 4

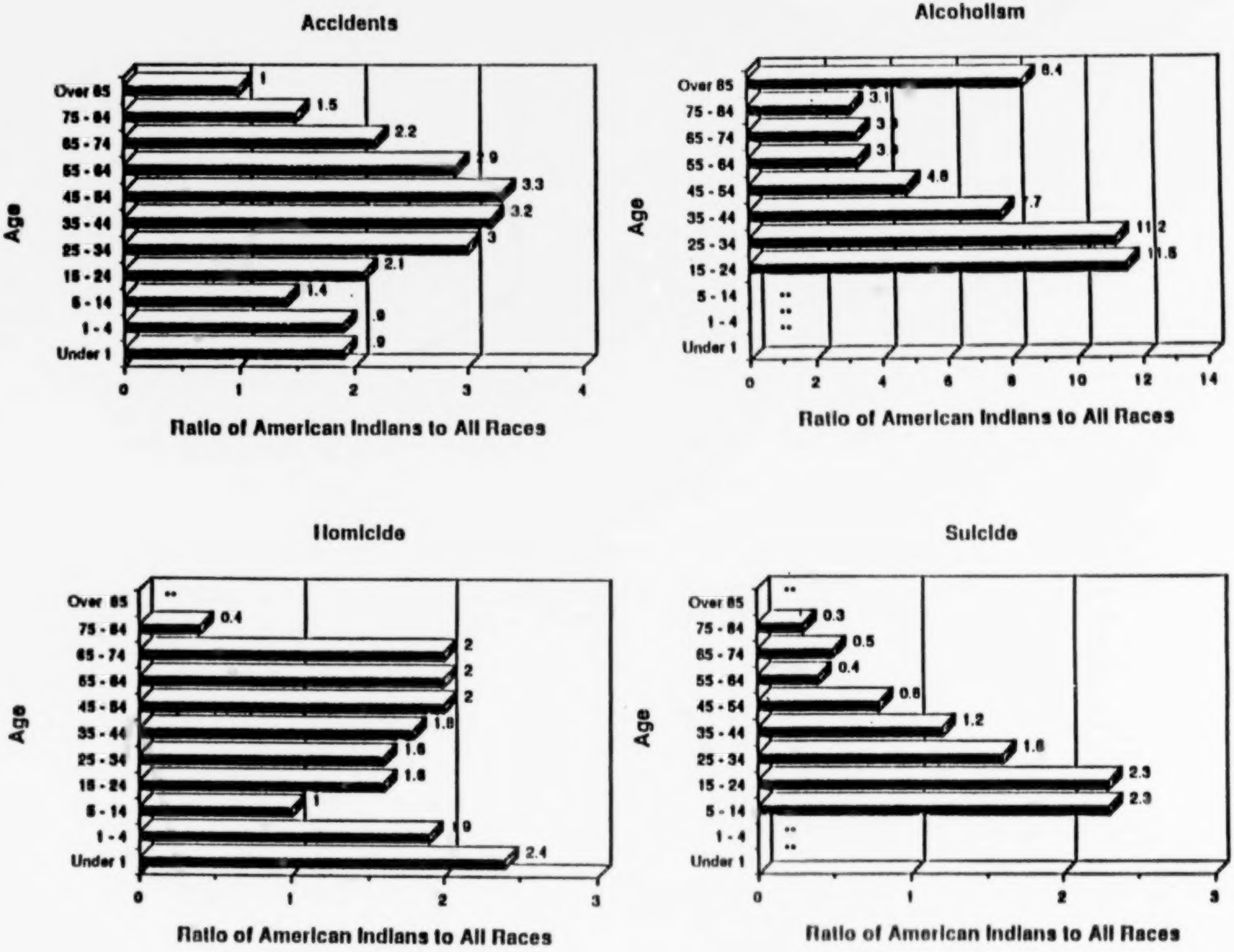
Age Distribution of Death Rates Due to Selected Causes for American Indians Versus All Races (Rates Per 100,000 Population)

Age	Accidents American Indian	 All Races	 Ratio A.I./ All Races	Alcoholism American Indian	 All Races	 Ratio A.I./ All Races
Under 1	52.9	28.0	1.9	-	-	-
1 - 4	41.9	22.4	1.9	-	-	-
5 - 14	18.2	13.1	1.4	0.1	-	-
15 - 24	107.5	50.9	2.1	2.3	0.2	11.5
25 - 34	121.2	40.7	3.0	24.7	2.2	11.2
35 - 44	104.5	33.0	3.2	61.1	7.9	7.7
45 - 54	114.5	34.8	3.3	85.0	17.6	4.8
55 - 64	111.2	38.5	2.9	70.2	21.4	3.3
65 - 74	118.0	53.4	2.2	57.7	17.7	3.3
75 - 84	164.8	112.2	1.5	24.5	7.9	3.1
Over 85	292.1	280.3	1.0	18.4	2.2	8.4

Age	Homicide American Indian	 All Races	 Ratio A.I./ All Races	Suicide American Indian	 All Races	 Ratio A.I / All Races
Under - 1	15.9	6.7	2.4	-	-	-
1 - 4	5.1	2.7	1.9	-	-	-
5 - 14	1.2	1.2	1.0	1.4	0.6	2.3
15 - 24	21.6	13.7	1.6	27.9	12.1	2.3
25 - 34	27.4	17.3	1.6	25.0	16.0	1.6
35 - 44	23.7	13.3	1.8	18.4	15.3	1.2
45 - 54	20.8	10.2	2.0	13.4	16.6	0.8
55 - 64	13.0	6.5	2.0	7.4	16.9	0.4
65 - 74	9.7	4.9	2.0	9.0	17.4	0.5
75 - 84	1.7	4.7	0.4	7.0	20.3	0.3
Over 85	-	5.8	-	-	17.6	-

Figure 3

Major Causes of Death as a Ratio of American Indians to All Races



The age distribution of alcoholism deaths among American Indians compared to the age distribution for All Races indicates that American Indians are much more likely to die at an early age due to alcoholism. While the American Indian death rate is substantially above the All Races rate in all age categories, the ratio falls steadily with age through age 65. A similar pattern is present in the relative suicide death rates. The ratio of the American Indian suicide death rate to that for All Races declines steadily with age beyond the 15 to 24 age category. Alcohol dependency and other psychological disorders appear to be a particular problem among late adolescence and young adult American Indians.

The ratios of American Indian to the All Races death rates due to accidents and homicides tend to be rather stable across age categories, with American Indian death rates being substantially higher across most age categories. This result is not inconsistent with the alcoholism and suicide data. A homicide or accident victim may die due to the alcohol dependency problem or other psychological problem of another individual. Other factors contributing to the high accident death rate among American Indians include the fact that a high proportion of American Indians live in remote rural areas causing them to drive greater distances, and the fact that American Indians often drive unsafe vehicles or must transport passengers in open pickup truck beds.

Summary. Mortality data indicate that American Indians have greater health problems than other groups particularly up to the age of 55. American Indian death rates are 1.5 or more times the All Races death rates for most age categories up to age 55, and about double the All Races rate for ages 15 through 44. Deaths due to a set of alcohol and behaviorally-related causes (alcoholism, accidents, suicide and homicide) are disproportionately high at young ages among American Indians. In addition, deaths due to pneumonia and influenza, diabetes mellitus, and tuberculosis are disproportionately high among American Indians. To the extent that death rate data can be used as a proxy measure of the living disabled population, these results suggest that the overall rate of disability among working age and younger American Indians is substantially higher than that for All Races. They further indicate that disability rates are likely to be particularly high among American Indians in the areas of alcoholism and other psychological disorders, and disorders associated with poor sanitation and poor socio-economic conditions.

IHS Inpatient Hospitalization Data

Hospitalization data from IHS hospitals and hospitals providing services under contract to IHS can provide important indications of the incidence of disabling conditions. The greatest strength of this data is its comprehensiveness. Individuals with a wide variety of disabling conditions are served by IHS hospitals and all age categories are served.

Hospitalization data provide only a very indirect measure of the incidence of disabling conditions, however. For each hospitalized patient, one or more (up to 5 in the IHS system) diagnostic codes are entered indicating the condition(s) exhibited by the patient. The disease codes used for this analysis correspond to the International Classification of Diseases (ICD) system of codes. Some of these ICD codes correspond to diseases or conditions which are almost certain to be disabling, for example, quadriplegia. Others correspond to diseases or conditions which are almost never disabling, such as a simple fracture of a limb. Still others pertain to conditions which are sometimes but not always disabling, for example a heart attack. The ICD categories were organized and grouped into disability-oriented categories in order to provide information useful for this study.

Because of the level of detail afforded, RSA's major disability codes have been used as the benchmark for this reclassification. A preliminary scheme for matching ICD codes to RSA codes was developed by the investigators and was subsequently circulated among medical record experts in the IHS system. The set of categories derived from this analysis is presented in Appendix C-1. The revised set of disease categories generally retains broad disease categories from the ICD system, but within each broad disease category sets of ICD codes associated with major identifiable diseases or conditions which have a significant probability of causing disability are identified. In some instances a group of miscellaneous diseases within a given broad disease category which have a significant probability of causing disability are identified. Such groups of diseases are identified in tables as "other likely disabling" diseases or conditions. In a few cases, for instance tuberculosis, it has been possible to identify a subset of the ICD codes for a given disease type which are particularly likely to represent a disabling condition. Such subsets are identified as "likely disabling"; however, when a "likely disabling" subcategory is present it is not appropriate to infer that the remainder of the disease category is unlikely to lead to a disabling condition.

The data used for this analysis are based upon all listed diagnoses for each patient. All diagnoses are used because this provides a more comprehensive measure of the medical conditions and potential disabilities present in the patient population, and because chronic conditions may represent the underlying cause of acute problems which are likely to appear as the first listed diagnosis for a patient. Since the chronic conditions are more likely to be disabling, it is important to look at all diagnoses for each patient. However, this only exacerbates the problem of dual counting. A patient who is hospitalized more than once over the sample period will be counted more than once, and a patient with multiple diagnoses listed will be counted once in each indicated disease class. This duplicated count problem is present in both the IHS data and general population sample data, however. Thus, if the degree of duplication can be assumed to be roughly equal in both data sets, comparisons should not be affected.

The IHS data used are for all inpatients at IHS and contract hospitals for the fiscal years 1984 through 1986. Three years of data have been pooled in order to support more detailed analysis of IHS inpatient data. The U.S. general population data come from the survey of U.S. short stay hospitals conducted by the U.S. Bureau of Health Statistics for the calender year 1985.

Hospitalization rates by disease class. General statistics reporting the rate of diagnosed diseases by age are presented in Table 5. Rates for All Races and for American Indians (in IHS service areas) are presented. Several findings from this table are of interest. First, the rate of diagnosed disease is much lower for American Indians than for the U.S. population. This is due to two causes. The rate of hospitalization per unit population is lower among the IHS American Indian population and the number of diagnoses per patient is about 2.5 for the U.S. population sample and only 2.0 for IHS facilities. Also noteworthy are differences in the population age distribution and the age distribution of rates of diagnosed disease. The hospitalized American Indian population is markedly younger than the total U.S. population. The proportion of American Indians under 16 is about 1.5 times that of the U.S. population as a whole. The percentage of American Indians over the age of 65 is less than half that for all races. This may partially explain the lower diagnosed disease rate among American Indians since the rate of diagnosed diseases increases with age for both groups. However, the rate of diagnosed disease is lower for American Indians across all age categories. It is interesting to note that the relative rate for American Indians is highest in the 16 to 34 age bracket and drops off sharply thereafter. This is consistent with the mortality data in the previous section.

Table 5

Age Distribution of Population and Diagnosed Diseases for American Indians Versus All Races

	Ages				
	0-16	16-34	35-64	65	All Ages
% of Population					
U.S. All Races	23.4	32.9	31.9	11.8	100.0
American Indian	34.9	36.2	23.7	5.3	100.0
% of Diagnosed Dis.					
U.S. All Races	9.0	19.8	31.6	39.6	100.0
American Indian	19.7	35.4	30.3	14.6	100.0
Rate of Diag. Dis. (per 10,000 pop.)					
U.S. All Races	1,417	2,222	3,650	12,384	3,689
American Indian	1,207	2,085	2,732	5,929	2,134
Ratio: A.I.. Rate to U.S. All Races Rate	.85	.94	.75	.48	.58

Given the high death rates reported within the American Indian population and the poor socio-economic status of Indian people, it is likely that the lower overall diagnosed disease rates found for American Indian people reflect differences in accessing services and difficulties in measuring the IHS service area population, rather than indicating a lower general prevalence of disease among American Indians. Because of the apparent overall underrepresentation of American Indians the remaining analysis will focus on relative percentages of all diagnoses within a given category rather than presenting rates per unit of population.

The distribution of diagnoses by detailed disease types is presented in Table 6. This table indicates the percentage of all diagnoses falling into a given disease category and the ratio of the American Indian percentage to that for U.S. short stay hospitals. A ratio greater than one indicates a relatively higher proportion of American Indians in a given disease class.

Table 6

Percentage Distribution of Diagnosis by Disease Type for IHS Versus All U.S. Short Stay Hospitals

	% of All Diagnoses		
	(A) IHS	(B) U.S.	Ratio A/B
Infectious and Parasitic Diseases	3.46%	2.28%	1.52
Ill-defined Intestinal Infection	.22%	.03%	7.23
Tuberculosis:	.22%	.05%	4.01
Likely Disabling	.05%	.02%	2.66
Neoplasms:	1.91%	5.27%	.36
Malignant:	1.44%	4.15%	.35
Lung	.16%	.59%	.27
Breast	.10%	.31%	.31
Leukemia	.05%	.12%	.42
Endocrine, Nutritional, and Metabolic Diseases	7.16%	6.53%	1.10
Diabetes Mellitus:	4.20%	2.81%	1.49
Likely Disabling	.46%	.17%	2.79
Other Endocrine Condition	.14%	.16%	.88
Malnutrition	.10%	.16%	.63
Gout	.01%	.04%	.35
Cystic Fibrosis	.01%	.02%	.55
Diseases of the Blood and Blood Forming Organs	1.98%	2.03%	.98
Anemias	1.55%	1.56%	.99
Mental Disorders:	6.55%	4.87%	1.34
Psychoses	.56%	1.20%	.46
Neurotic Personality Disorders	60%	.87%	.70
Alcohol Dependence or Psychosis	3.62%	1.10%	3.28
Drug Dependence or Psychosis	.08%	.23%	.35
Mental Retardation	.08%	.09%	.89

Table 6 (Continued)

Percentage Distribution of Diagnosis by Disease Type for IHS Versus All U.S. Short Stay Hospitals

	% of All Diagnoses		
	(A) IHS	(B) U.S.	Ratio A/B
Diseases of the Nervous System:	1.33%	2.06%	.64
Meningitis	.13%	.05%	2.59
Multiple Sclerosis	.01%	.06%	.16
Hemiplegia	.13%	.30%	.45
Cerebral Palsy	.04%	.04%	.93
Paralysis:	.20%	.19%	1.05
Quadriplegia	.06%	.03%	2.00
Lower Limb(s)	.08%	.05%	1.71
Upper Limb(s)	.00%	.01%	.59
Epilepsy	.20%	.19%	1.02
Muscular Dystrophy	.02%	.06%	.38
Eye Conditions:	1.23%	.98%	1.26
Diabetic Retinopathy	.08%	.07%	1.25
Glaucoma	.08%	.10%	.84
Cataract	.33%	.27%	1.22
Blindness or Low Vision:	.06%	.06%	1.02
Both Eyes	.04%	.05%	.93
Ear Conditions:	2.15%	.74%	2.89
Otitis Media	1.63%	.41%	4.02
Hearing Loss	.16%	.07%	2.35
Diseases of the Circulatory System:	7.69%	20.41%	.38
Rheumatic Heart Disease	.20%	.18%	1.10
Hypertensive Heart Disease	1.71%	3.26%	.52
Ischemic Heart Disease:	1.61%	6.11%	.26
Acute Myocardial Infarction	.40%	.97%	.41
Atherosclerotic Heart Disease	.30%	1.83%	.16
Congestive Heart Failure	1.05%	1.74%	.60
Other	1.58%	4.56%	.35
Cerebrovascular Disease:	.66%	2.05%	.32
Cerebral Seizure (Stroke)	.23%	.42%	.55
Diseases of the Respiratory System:	7.97%	8.03%	.99

Table 6 (Continued)

Percentage Distribution of Diagnosis by Disease Type for IHS Versus All U.S. Short Stay Hospitals

	% of All Diagnoses		
	(A) IHS	(B) U.S.	Ratio A/B
Chronic Obstructive Pulmonary Diseases:	2.01%	2.97%	.68
Bronchitis	.41%	.54%	.75
Emphysema	.04%	.20%	.19
Asthma	.90%	.83%	1.09
Bronchiectasis	.08%	.04%	1.82
Other Likely Disabling: Respiratory Diseases	.98%	1.48%	.66
Diseases of the Digestive System:	8.29%	8.74%	.95
Dental Disorders:	.30%	.21%	1.45
Likely Disabling	.02%	.06%	.35
Ulcers (Stomach & Sm. Intest.)	.30%	.59%	.51
Hernia (with Gangrene)	.01%	.05%	.32
Noninfectious Entritis and Colitis	1.02%	.84%	1.21
Alcoholic Liver Damage	.59%	.17%	3.56
Other Likely Disabling	1.18%	1.54%	.77
Diseases of Genito-Urinary System:	5.99%	7.83%	.77
Renal Failure	.60%	.50%	1.20
Complications of Pregnancy, Childbirth and the Puerperium:	18.29%	7.37%	2.48
Hypertension Complicating Preg.	1.13%	.28%	3.98
Diseases of the Skin and Subcutaneous Tissue	2.45%	1.40%	1.76
Diseases of the Musculoskeletal System and Connective Tissue	2.70%	5.26%	.51
Arthropathies and Related Disorders:	1.22%	1.61%	.76
Osteoarthritis	.27%	.74%	.37
Dorsopathies (Disords. of Back)	.45%	1.70%	.26
Rheumatism (Excluding the Back)	.37%	.76%	.49

Table 6 (Continued)

Percentage Distribution of Diagnosis by Disease Type for IHS Versus All U.S. Short Stay Hospitals

	% of All Diagnoses		
	(A) IHS	(B) U.S.	Ratio A/B
Congenital Anomalies	1.12%	.91%	1.23
Nervous System:	.07%	.05%	1.23
Spina Bifida	.01%	.02%	.77
Hydrocephalus	.04%	.02%	2.04
Eye	.02%	.01%	2.03
Ear	.05%	.02%	2.17
Cleft Palate-Cleft Lip & Deformities of the Tongue	.06%	.04%	1.70
Musculoskeletal Deformities:	.22%	.20%	1.10
Spinal	.03%	.06%	.47
Downs Syndrome & Other Chromosomal Anomalies	.06%	.03%	2.08
Conditions Originating in the Perinatal Period:	4.16%	2.45%	1.70
Low Birthweight	.46%	.30%	1.50
Birth Asphyxia & Respiratory Distress	.34%	.26%	1.31
Symptoms, Signs, & Ill Defined Conditions	5.81%	5.84%	.99
Injury and Poisoning:	9.77%	7.00%	1.40
Skull Fracture	.42%	.24%	1.74
Spinal Cord Fracture	.14%	.13%	1.05
Dislocation of Vertabrae	.01%	.02%	.31
Sprains & Strains of Back (Including Neck)	.14%	.45%	.32
Intracranial Injuries (Except Skull Fracture)	.56%	.39%	1.41
Traumatic Amputation of Limbs or Digits	.03%	.03%	.86
Late Effect of Injuries	.13%	.15%	.88
Injury to Nerves & Spinal Column	.10%	.08%	1.28
TOTAL	100.00%	100.00%	1.00

American Indians are relatively less likely to be hospitalized with all forms of cancer (neoplasms) and all types of heart and circulatory system diseases except rheumatic heart disease and hypertension complicating pregnancy. This is consistent with low American Indian death rates due to these diseases.

American Indians are substantially more likely than others to be hospitalized with diagnoses of infectious and parasitic diseases, mental disorders, eye and ear conditions, perinatal conditions and injuries and poisonings. The high rate for mental disorders is due entirely to alcohol dependency, while the relative rates for all other types of mental disorders are less than those for the U.S. population. The relative rate for alcohol dependency is over three times that of the U.S. population as well as for the digestive system disorder, alcohol liver damage. Among eye and ear conditions American Indians are disproportionately likely to suffer from diabetic retinopathy and cataracts, more than twice as likely (in relative terms) to suffer hearing loss, and four times as likely to have otitis media. The disproportionate rates of perinatal conditions, particularly low birthweight and birth asphyxia, suggest possible mental retardation and developmental disabilities. The injury and poisoning diagnostic categories for American Indians are consistent with the high accident death rate among American Indians. Disproportionately high rates are reported for American Indians for the highly disabling categories of skull fractures, other intracranial injuries, and injuries to the nerves and spinal column.

Disproportionate rates of diagnoses are indicated for several additional individual subcategories presenting high probability of disability. American Indians are much more likely than others to be diagnosed with tuberculosis and diabetes mellitus. They are also more likely to suffer from entritus and colitis as well as ill-defined intestinal infections and renal failure. American Indians are also disproportionately likely to be diagnosed as having several major types of birth defects including hydrocephalus, chromosomal anomalies, and deformities of the eye, ear, lip, and tongue.

Age and sex distribution of diseases. The American Indian population is a younger population and thus higher percentages of American Indian clients would be expected in the younger age groups. However, the differentials between the two groups are striking. While the proportion of American Indians under the age of 16 in the population is 1.5 times that of All Races, the proportion of hospitalizations made up by this age group among American Indians is more than twice that for All Races. The proportion of diagnoses pertaining to 16 to 34 year olds is also much greater among American Indians. This age pattern is quite consistent across virtually all disease categories and serves to underscore the health problems of American Indian children and young adults. A comparison of the age distribution of American Indian and U.S. population hospital patients for detailed disease categories is presented in Appendix C-2.

Comparison of the sex distribution of diseases for American Indian and U.S. short stay hospital patients indicates a slightly higher overall proportion of females in the IHS hospitals; 60 percent of IHS patients versus 57.5 percent of U.S. population diagnoses come from female patients. This is primarily due to the high number of hospitalizations due to pregnancy, resulting from the higher birth rate. The sex distribution patterns for most disease types show reasonable parallel patterns between American Indians and all U.S. patients and thus disease specific data by sex are not presented here.

Geographic distribution of disease types among the IHS service population. The percentage distribution of diagnoses by disease category for each IHS region are presented in Table 7, while state distributions for 16 states are shown in Appendix C-3. Only IHS data are shown on a geographic basis because such geographic breakdowns are not available for the U.S. sample data presented in the previous tables. The state classification is based on the client's state of residence and the 16 states selected include all states with a total of 4,000 or more diagnoses over the three year period. Data are not displayed in instances where fewer than 40 diagnoses of a given disease category occurred for a given IHS area or state.

Table 7

Percentage Distribution of Diagnoses by Disease Type and IHS Area

	Tucson	Aber-deen	Bemi-dji	Albu-quer	Alaska	Bill-ings	Okla-homa	Nash-ville	Phoe-nix	Port-land	Nava-jo
Infectious and Parasitic Diseases	6.70	2.95	3.90	3.42	3.03	2.95	2.95	2.77	5.31	3.18	3.18
Tuberculosis	---	.24	---	.13	.31	.26	.14	---	.22	---	.27
Neoplasms:	.66	1.58	1.68	2.18	3.24	1.84	2.46	2.34	1.28	1.97	1.57
Malignant	.53	1.25	1.41	1.70	2.61	1.38	1.77	1.97	.89	1.39	1.14
Endocrine, Nutritional, and Metabolic Diseases:	11.40	7.65	9.16	8.17	2.74	7.45	8.04	12.24	9.11	6.93	5.42
Diabetes Mellitus	8.03	4.78	6.14	4.72	.76	4.20	4.69	8.62	6.05	3.70	2.68
Diseases of the Blood and Blood Forming Organs	2.10	1.79	1.13	2.44	2.64	1.71	2.16	2.28	1.69	1.65	1.95
Mental Disorders:	5.51	9.62	8.05	9.22	7.36	9.25	3.33	6.93	5.85	7.05	4.77
Alcohol/Drug Depend.	2.71	6.00	3.92	6.25	3.43	5.22	1.69	2.97	3.74	3.24	2.42
Diseases of Nervous System:	1.62	1.30	.97	1.39	1.60	1.29	.97	1.64	1.28	1.47	1.51
Epilepsy	---	.26	---	.13	.17	.16	.13	---	.13	.29	.29
Degenerative Disorders of Nervous System	.58	.27	.26	.36	.56	.29	.17	.38	.33	.42	.41
Eye Conditions:	.83	1.03	1.11	1.58	1.79	.88	.63	.72	1.79	.75	1.35
Cataract	---	.23	---	.20	.56	.18	.10	---	.68	.21	.38
Other Likely Disabling	---	.20	.29	.41	.21	.15	.23	---	---	.26	.21
Ear Conditions:	1.43	2.17	1.80	1.25	4.73	2.25	.96	1.37	2.31	1.95	2.20
Otitis Media	1.25	1.84	1.36	1.02	3.02	1.65	.71	1.03	1.87	1.30	1.73
Diseases of Circulatory System:	6.37	8.08	14.47	6.23	6.02	8.94	10.62	12.50	6.60	9.68	5.30
Diseases of Respiratory System	9.01	10.56	10.52	6.50	8.17	9.00	5.74	7.45	8.44	9.38	6.81
Chronic Obstructive Pulmonary Diseases	1.61	2.90	3.11	1.25	2.32	2.52	1.82	2.15	2.11	2.31	1.14
Other Likely Disabling Respiratory Diseases	1.06	.96	.97	1.01	1.07	.98	.81	.99	.95	1.08	1.10

Table 7 (Continued)

Percentage Distribution of Diagnoses by Disease Type and IHS Area

	Tucson	Aberdeen	Bemidji	Albuquer	Alaska	Billings	Oklahoma	Nashville	Phoenix	Portland	Navajo
Diseases of Digestive System:	7.62	8.62	7.35	10.10	7.43	9.25	8.42	7.57	7.22	10.35	7.99
Noninfectious Entiritis and Colitis	2.24	1.81	.75	1.10	.65	1.08	.77	1.17	.30	1.29	1.16
Alcoholic Liver Damage	.85	.69	.40	1.06	.17	.82	.40	.45	.91	.65	.39
Other Likely Disabling	1.09	1.97	2.02	1.89	1.35	2.05	1.50	1.21	1.24	2.19	1.00
Diseases of Genito-Urinary System:	5.26	5.53	4.70	6.60	5.08	5.80	7.03	7.70	6.73	6.08	5.33
Renal Failure	1.03	.73	.40	.93	.16	.43	.43	1.33	.83	.44	.59
Complications of Pregnancy, Childbirth and Puerperium:	14.43	11.98	8.74	14.89	16.71	12.31	25.47	12.38	13.46	14.08	27.65
Hypertension Complicating Preg.	1.53	.50	.58	1.16	.83	.61	1.18	.82	1.21	.51	2.00
Diseases of the Skin and Subcutaneous Tissue	4.65	3.01	2.36	2.59	2.00	2.41	1.87	3.34	3.19	2.02	1.98
Diseases of the Musculo-skeletal System and Connective Tissue:	2.65	2.76	3.03	2.59	4.30	3.28	2.19	2.73	2.75	3.87	1.86
Arthropathies, Rheumatism, and Related Disorders	1.67	1.57	1.59	1.50	2.83	1.76	1.27	1.46	1.64	2.35	1.08
Congenital Anomalies	.70	.82	.58	.81	1.39	.72	.97	.83	1.17	.55	1.77
Conditions Originating in the Perinatal Period	3.17	3.11	1.79	3.51	3.85	1.73	6.63	2.20	4.27	1.38	5.13
Symptoms, Signs, & Ill Defined Conditions	5.88	6.45	8.46	6.17	6.06	6.66	4.47	7.78	6.08	6.20	5.09
Injury and Poisoning:	10.00	10.98	10.18	10.37	11.82	12.29	5.12	5.22	11.45	11.45	9.15
Intracranial Injury, Including Skull Fracture	.87	1.30	1.06	1.07	1.08	1.50	.54	.63	1.06	1.27	.69
Injury to the Spinal Column, Back, or Nerves	---	.42	.35	.37	.53	.68	.22		.39	.68	.31

The regional data underscore the fact that American Indians are a heterogeneous group representing differing sets of health problems. The diabetes disease category provides a prime example of this phenomenon. Diabetes makes up more than 6 percent of all diagnoses in four IHS areas (Nashville, Tucson, Bemidji and Phoenix), a rate which is more than double that of the general population as shown in Table 6. At the same time, diabetes makes up less than one percent of the case load in the Alaska area. Most strikingly, Tucson and Phoenix areas have over six percent of their case load composed of diabetes while the Navajo area has less than three percent of its diagnoses in the diabetes category. This shows that the relative prominence of a particular disease can vary markedly even among American Indian groups residing in a given geographic area. Inter-area differences in the prominence of particular disease categories may also reflect differences in the expertise of IHS staff and their efforts to identify and treat patients with that disease.

Substantial differentials in the proportion of diagnoses accounted for by particular diseases are present across virtually all disease categories. Alcohol and drug dependency make up a particularly large proportion of all diagnoses in the Aberdeen and Albuquerque areas. Otitis media is particularly prevalent in the Alaska IHS area. Percentage rates of circulatory diseases tend to be higher for eastern IHS areas than for most of the western areas. Respiratory disease and particularly chronic obstructive pulmonary disease tend to be most prevalent in the northern IHS areas, as do arthropathies and other diseases of the musculoskeletal system. The percentage of diagnoses made up of injuries and poisonings is considerably lower for the Oklahoma and Nashville areas than for the other nine areas. A relatively strong correlation between the percentage of alcohol dependency diagnoses and the percentage of injury and poisoning diagnoses is also apparent, suggesting that alcohol abuse does influence injury rates. State to state disease patterns generally parallel the IHS area patterns.

Summary. The rate of diagnosed disease based on hospitalization data is considerably lower for American Indians in IHS service areas than for the U.S. population as a whole. Given the high death rates of American Indians at early ages and other evidence of American Indian health problems, this lower rate appears to indicate that American Indians generally have less access to inpatient medical services.

Percentage distributions of diagnoses by disability-oriented disease class indicate that American Indians are disproportionately likely to have exhibited several diseases and conditions which tend to be disabling. These disease categories include tuberculosis, diabetes, alcohol dependency and related conditions, eye and ear conditions, entritis and colitis, renal failure, perinatal conditions and several forms of congenital disorders, and accidents and injuries.

The age distribution of diagnosed diseases clearly reflects the fact that American Indians tend to have health problems at earlier ages than other groups. While the American Indian population is younger than the U.S. population as a whole, this only partially explains the disproportionate numbers of young clients in the IHS data. American Indians under the age of 35 are clearly more likely than others in their age group to experience a wide variety of medical problems.

Geographic comparisons of the distribution of diagnosed diseases suggest that American Indians are a very diverse group and that policies need to be tailored to the needs of particular American Indian populations.

A Comparison of IHS Hospitalization and RSA Rehabilitation Data by Disability Category

The IHS hospitalization data discussed above have been organized into disability-oriented categories which can be made to approximately parallel the major disability categories used by RSA in providing vocational rehabilitation services to clients. The limitations of this analysis must be clearly understood. Some of the hospitalization diagnostic categories narrowly define small numbers of patients who are very likely to have a disability which can be appropriately served by vocational rehabilitation. At the same time others of the hospitalization diagnostic categories provide large pools of patients with a much smaller proportion of those in the pool being likely to have a disabling condition which can be served by RSA. Thus any comparisons made must be in relative terms. If the percentage of American Indian diagnoses in a disease class is much higher than the percentage in that disease class for all U.S. hospitals, it is reasonable to expect a corresponding relationship between American Indians and other clients in vocational rehabilitation programs. The treatment or service ratios for American Indians compared to all groups can be compared across the two data sets. The IHS hospitalization data covers only states served by IHS, while national RSA data are used. Given the limitations and the very indirect nature of the data, results must be interpreted very cautiously.

The data presented here can in no way measure the overall appropriateness of the numbers of American Indians served by RSA, nor can it evaluate the effectiveness of that service. These issues have been addressed in a study (Morgan and O'Connell,1987) which indicates that American Indians are substantially underserved on an overall basis by RSA, and that rates of successful rehabilitation among those American Indians who are served are lower than success rates for other groups for a variety of reasons. An American Indian who is disabled was found to be only 60 percent as likely as other individuals who are disabled to enter the vocational rehabilitation system and be successfully rehabilitated through RSA. The tables presented here can only identify categories of disease which are more or less underserved than others, and do not address the overall level of services received across disability types.

The distributions of diagnoses by disability type for IHS and U.S. short stay hospitals are presented in Table 8. These distributions are very similar to those presented in Table 6 above except that disease categories have been aggregated where necessary to correspond to IHS major disabling condition categories. Not all disease categories are included in Table 8. In general, only those disease classes specifically identified as subcategories in Table 6 and the "other likely disabling" categories of Table 6 are translated into an appropriate category of Table 8. The classifications scheme presented in Appendix C-1 indicates the correspondence established between ICD and RSA codes. Table 8 does not provide any startling results not noted earlier.

Table 8

Distribution of Diagnoses by Disability Type for IHS Versus U.S. Short Stay Hospital

	Percent of All Diagnoses		
	(A) IHS	(B) U.S.	Ratio A/B
Conditions of the Eye	1.25%	.99%	1.26
Cataract	.33%	.27%	1.22
Glaucoma	.08%	.10%	.84
Other Disease	.75%	.55%	1.38
Congenital	.02%	.01%	2.03
Accident - Other	.06%	.06%	1.02
Conditions of the Ear	2.20%	.77%	2.87
Disease	1.99%	.67%	2.95
Congenital	.05%	.02%	2.17
Accident - Other	.16%	.07%	2.35
Orthopedic Conditions	3.67%	4.05%	.90
Cerebral Palsy	.04%	.04%	.93
Congenital	.29%	.25%	1.13
Arthritis	1.22%	1.61%	.76
Stroke	.23%	.42%	.55
Other Diseases & Degenerative Conditions	.49%	.65%	.76
Spinal Cord	.25%	.24%	1.05
Accident - Other	1.14%	.82%	1.39
Psychological Disorders	6.55%	4.87%	1.34
Psychotic Conditions	.56%	1.20%	.47
Psychoneurotic Conditions	.60%	.87%	.70
Alcohol Abuse	3.62%	1.10%	3.28
Drug Abuse	.08%	.23%	.35
Other Character Disorders	1.61%	1.39%	1.16
Mental Retardation	.08%	.09%	.89
Other Disabling Conditions	31.48%	48.02%	.66
Cancer	1.44%	4.15%	.35
Asthma & Allergies	.90%	.83%	1.09
Diabetes Mellitus & Other Endocrine Cond.	4.66%	2.97%	1.57
Blood Conditions	1.98%	2.03%	.98
Epilepsy	.20%	.19%	1.02
Other Nervous System	.60%	1.18%	.51
Heart and Circulatory Conditions	7.69%	20.41%	.38
Respiratory Conditions	2.09%	3.62%	.58
Dental Conditions	.30%	.21%	1.45
Digestive Conditions	3.11%	3.18%	.98
Genito-Urinary Conditions	5.40%	7.33%	.74
Renal Failure	.60%	.50%	1.20
Speech Impairments	.06%	.04%	1.70
Skin Conditions	2.45%	1.40%	1.76

The corresponding distributions of American Indians and others accepted as RSA clients are presented in Table 9. The data presented there represent American Indian VR clients and a sample of general population clients served over fiscal years 1980 through 1982.

Table 9

Distribution of Accepted RSA Cases by Disability Type for American Indians Versus All Clients

	Percent of Accepted Cases (A) A.I.	(B) U.S.	Ratio A/B
Conditions of the Eye	6.26%	7.64%	.82
Cataract	1.01%	1.27%	.79
Glaucoma	.33%	.46%	.73
Other Disease	2.26%	2.98%	.76
Congenital	.85%	1.22%	.70
Accident-Other	1.81%	1.72%	1.05
Conditions of the Ear	3.41%	4.32%	.79
Disease	1.09%	1.49%	.74
Congenital	.77%	1.13%	.68
Accident-Other	1.54%	1.70%	.90
Orthopedic Conditions	24.31%	25.76%	.94
Cerebral Palsy	.52%	.99%	.52
Congenital	1.46%	1.98%	.74
Arthritis	2.66%	2.17%	1.22
Stroke	.60%	.83%	.72
Other Diseases & Degenerative Conditions	2.50%	3.61%	.69
Spinal Chord	2.36%	2.00%	1.18
Accident-Other	14.22%	14.18%	1.00
Psychological Disorders	48.29%	41.65%	1.16
Psychotic Conditions	4.15%	7.52%	.55
Psychoneurotic Conditions	5.20%	8.11%	.64
Alcohol Abuse	19.35%	5.80%	3.34
Drug Abuse	1.52%	1.54%	.99
Other Character Disorders	9.45%	7.84%	1.21
Mental Retardation	8.60%	10.84%	.79
Other Disabling Conditions	16.34%	19.15%	.85
Cancer	.70%	.87%	.80
Asthma & Allergies	.53%	1.01%	.53
Diabetes Mellitus and Other Endocrine Cond.	1.59%	2.00%	.79
Blood Conditions	.30%	.42%	.70
Epilepsy	2.10%	2.20%	.96
Other Nervous System	.81%	1.17%	.69
Heart and Circulatory Conditions	2.52%	3.98%	.63
Respiratory Conditions	.69%	.91%	.76
Dental Conditions	2.89%	1.72%	1.68
Digestive Conditions	1.43%	1.75%	.81
Genito-Urinary Conditions	1.73%	2.00%	.87
Renal Failure	.42%	.20%	2.06
Speech Impairments	.39%	.52%	.75
Skin Conditions	.25%	.40%	.62

Table 10 compares the service or treatment ratios of the IHS and the RSA data across categories of major disabling conditions, where a ratio greater than one indicates a disproportionate percentage of American Indian patients/clients in the specified disability category. The ratios indicate substantially lower service ratios by RSA for most sensory disorders. RSA service ratios are lower than those for IHS in all categories of eye and ear conditions. The difference is particularly large for all categories of ear conditions and for congenital eye conditions, although the latter may have limited meaning due to the very small numbers of cases involved (see percentages in Table 9). RSA's service ratio for orthopedic conditions is slightly higher over all then that for the IHS hospitalization data. However, the service ratio for orthopedic impairments due to accidents is substantially lower for RSA. The service ratios for psychological disorders cannot be meaningfully compared due to the huge disparity in the absolute importance of this category between the two data sets. Psychological disorders make up over 40 percent of all RSA cases and less than 7 percent of IHS diagnoses. Hospitalization data clearly do not adequately cover many types of psychological disorders. The limited data available suggest that RSA is serving psychological disorders at a rate consistent with the IHS data. The disparity between individual categories and the ratios for all psychological disorders is caused by the extreme dominance of alcohol dependency in the IHS data. In other disabling conditions the RSA service ratio is generally higher than that for IHS hospitalizations. Notable exceptions are in the areas of diabetes, asthma and allergies, speech impairments, and skin conditions.

Table 10

Comparison of RSA and IHS Service Ratios For American Indians

	Ratio American Indian to General Population Service Percentages	
	RSA	IHS
Conditions of the Eye	.82	1.26
Cataract	.79	1.22
Glaucoma	.73	.84
Other Disease	.76	1.38
Congenital	.70	2.03
Accident - Other	1.05	1.02
Conditions of the Ear	.79	2.87
Disease	.74	2.95
Congenital	.68	2.17
Accident - Other	.90	2.35
Orthopedic Conditions	.94	.90
Cerebral Palsy	.52	.93
Congenital	.74	1.13
Arthritis	1.22	.76
Stroke	.72	.55
Other Diseases & Degenerative Conditions	.69	.76
Spinal Cord	1.18	1.05
Accident - Other	1.00	1.39
Psychological Disorders	1.16	1.34
Psychotic Conditions	.55	.47
Psychoneurotic Conditions	.64	.70
Alcohol Abuse	3.34	3.28
Drug Abuse	.99	.35
Other Character Disorders	1.21	1.16
Mental Retardation	.79	.89
Other Disabling Conditions	.85	.66
Cancer	.80	.35
Asthma & Allergies	.53	1.09
Diabetes Mellitus & Other Endocrine Cond.	.79	1.57
Blood Conditions	.70	.98
Epilepsy	.96	1.02
Other Nervous System	.69	.51
Heart and Circulatory Conditions	.63	.38
Respiratory Conditions	.76	.58
Dental Conditions	1.68	1.45
Digestive Conditions	.81	.98
Genito-Urinary Conditions	.87	.74
Renal Failure	2.06	1.20
Speech Impairments	.75	1.70
Skin Conditions	.62	1.76

Summary. The data presented above can provide only a very tentative appraisal of relative rates of service across disease types between RSA and IHS. Other studies (Morgan & O'Connell, 1987) suggest that the American Indians are substantially underserved overall by vocational rehabilitation agencies. The comparisons presented here indicate that RSA's service ratio for American Indians is substantially lower than that based on IHS hospitalization data in all areas of sensory disabilities, orthopedic impairments due to accident, asthma and allergies, diabetes, speech impairments, and skin conditions. It is not appropriate to treat the hospitalization data as a true incidence measure against which RSA performance is to be compared, since IHS may overserve or underserve particular disease classes as well. However, areas of major divergence between the two ratios do suggest possible service gaps which should be investigated.

A special analysis of California's Indian population was undertaken because comparable data from California is not currently available from this state in the national Indian Health Service data bank. Appendix C-4 provides a summary of this analysis.

Generally speaking, the analysis of California American Indian data does not show marked differences from the findings reported for the nation as a whole.

Analysis of Select IHS Area Regions

Because the American Indian population is heterogeneous, residing in widely varying environments, with unique genetic backgrounds, and experiencing many differing work and living conditions, health and disabling conditions within this group cannot be assumed to be identical. It is important to investigate regional differences and similarities of disabilities and disabling conditions affecting the Indian population to show specific needs and gaps in service requirements. Such an analysis provides a broader picture of the disabled Indian.

This section of the report is intended to look at selected regional groups in order to highlight significant health conditions that are likely to result in some form of disability. The selected IHS regions, Navajo, Billings, and Alaska, were chosen for a regional review of health status because they represent three regions of the country with unique environmental, climatic, and tribal differences. Further, these IHS regions have developed pediatric handicapped registers which were made available to us for analysis. Site visits made to each area enabled the researchers to identify and collect many secondary sources of data specific to health conditions from each region. Although data was collected and analyzed from the Indian Health Service inpatient/outpatient client data bank, service delivery systems often make note of the original treatment diagnosis and not the major disabling condition. Further, many disabling conditions, such as developmental disabilities, do not necessarily present themselves in a medical state facilitating easy identification of disability problems. They may evade identification during the early years of a child's life until the child reaches school age. Additionally, because the Indian Health Service does not generally compile its data in a manner facilitating the calculation of disability prevalence rates, local IHS and tribal research and research performed by outside groups were reviewed to provide a more comprehensive picture of American Indian and Alaska Native with disabilities.

American Indians with Disabilities in the Navajo Area

The Navajo Nation was selected for closer scrutiny in this study because it occupies a unique position as the largest tribe in Indian country with a population almost four times that of the second largest tribe and a rural, isolated reservation land base located in three states. Because of the insular, traditional nature of Navajo society and because of the tribe's size and distance from non-Indian health services, it has long been a valuable subject for Indian health research. In addition, one of the nation's three federally-funded Indian Vocational Rehabilitation programs is operated on the reservation administered through the tribal structure at Window Rock, Arizona.

According to Indian Health Service population estimates, in 1986, 171,097 Indian people lived on or near the Navajo reservation. The reservation comprises 25,000 square miles and is largely economically undeveloped. Located in northern Arizona and northwestern New Mexico, the reservation also extends into southern Utah and touches the border of Colorado. The land is rural and much of it is inaccessible except by horse or four-wheel drive vehicle. There are no large metropolitan areas. Seventy-eight percent of the population is located in seven small communities; the rest is widely scattered in small family settlements with few families having telephones, central heating, electricity, gas, or running water (U.S. Bureau of the Census, 1980). Clean water and adequate sanitation services are not available in many rural areas of the reservation.

The Navajo Health Systems Agency (1987) reports that the Navajo people comprise approximately 94% of the reservation population, with the rest consisting of Whites and Indians from other tribes. In 1983, 51% of the population was female and 49% was male. The birth rate is high (26.8 per 1000 persons in 1984) and the overall population is increasing by approximately 2.5% per year. The overall Navajo population is young with one-half of the population below the age of 19 and only 4% over the age of 65.

Educationally and economically, the Navajo are extremely disadvantaged. In 1980, approximately 35% of reservation-based Navajos 25 years and over were high school graduates (compared to 72.3% in the State of Arizona) and only 3.2% of that group had graduated from college. The median family income on the reservation in 1979 was $9,079, as compared to $24,540 for the U.S. and $19,017 for Arizona; 49% of the Indian population had incomes below the poverty level, as compared to 9.2% of the U.S. and 13.2% of the Arizona population (U.S. Bureau of the Census, 1980).

Economic activities on the reservation consist primarily of the provision of services to the resident population, the mining and export of mineral resources (coal, petroleum, and uranium), and the raising of livestock. Twenty percent of employed persons in 1981 worked for the tribal or federal governments. The official Navajo unemployment rate for 1983 was 35.3% and was believed by the tribe to significantly underreport the unemployed population, as many individuals were not in the regular work force (Navajo Health Systems Agency, 1985).

The health system serving the Navajo Nation consists mainly of the Indian Health Service (IHS) and, to a lesser extent, private providers. The Indian Health Service maintains six hospitals with a total of 400 beds. Nine outpatient health centers and 13 health stations dot the reservation. One additional health center is managed by the Navajo tribe under P.L. 93-638, the Indian Self-Determination and Educational Assistance Act.

In many parts of the reservation, health facilities are not easily accessible because of the long distances (up to an hour) that people must drive over rough, sometimes impassable roads. Additional health care services may be contingent upon eligibility requirements and/or availability of required services. Speciality care not available at the IHS facility may be purchased by contract at other distant locations such as Phoenix, Arizona, or Albuquerque, New Mexico.

According to the Navajo Health Systems Agency (1986), there are four major environmental issues facing the Navajo Nation; these are radiation contamination, overgrazing of the land, pesticide contamination, and oil and gas mining and development. Uranium mining began on the Navajo Reservation in the 1940s and in the early years worker safety and cleanup of radioactive waste material were not required in leases and contracts. The rising lung cancer rate among former uranium miners and the contamination of some ground water supplies and other areas of public access are of particular public health concern. Based on a study of more than 700 Indian uranium miners, the increase in the risk of lung cancer among Navajo miners is estimated to be at least 85 fold (Schwartz, 1979). Further, the health of Indian families is threatened by such mining. Discarded mill tailings were used for construction of homes, schools, hospitals and roads in Grand Junction, Colorado. Inside the homes, the radioactivity was found to be more than 100 times the normal exposure level (Tso, 1980). The incidence of congenital deformities among newborn infants subsequently increased (Schwartz, 1979). Improper disposal of pesticides used in livestock dipping and spraying has also led to contamination of water and food supplies (Navajo Health Systems Agency, 1985).

Source of Data and Limitations. Comprehensive statistics on the disabled Navajo population were not available from any source. Outpatient and inpatient diagnoses for FY 1986 were obtained for Navajo Area IHS hospitals and clinics. In addition, a register of handicapped Navajo children maintained since 1983 by the Navajo Area Physical Therapy Department was procured. The very large body of health research performed on the Navajo population was reviewed and numerous articles from the existing professional literature addressing specific disabilities were analyzed. Because of the fragmented and incomplete nature of the data, a special effort was made to meet with IHS and tribal staff and to speak with professional staff by telephone to obtain additional insights and observations. A site visit to the Navajo Reservation to meet with the Indian Health Service health planner, the director of the Navajo Vocational Rehabilitation Program and the Navajo Health Systems Agency staff was made to gain a tribal, as well as an IHS, perspective.

With the exception of the pediatric register, the IHS data system does not report the numbers of patients but presents the data in terms of "patient visits". In addition, because of the severe limitation of resources within IHS, the numbers of patients served are not entirely reflective of the prevalence of a given health problem as services are contingent upon the availability of funds and providers to serve the clientele, as well as on IHS medical priorities. Also, as noted above, IHS has a medical orientation and is not in the business of quantifying disabilities which may not always result in the provision of medical services. Therefore, the IHS data can only be used as a general guide to the major disabling conditions among the population. In this regard, the outpatient data is particularly needed to capture information on long-term conditions that require regular monitoring without hospitalizations.

Pediatric Handicap Register. The leading categories among Navajo children reported as a disability by the Navajo Area Indian Health Service on the pediatric handicap register are presented in Appendix C-5. The most frequently appearing disabilities on the Navajo pediatric handicap register in order of prevalence are:

1. Developmental delay
2. Seizure disorder
3. Orthopedic disorders (combined category)
4. Language/speech delay
5. Problems related to meningitis
6. Problems related to prematurity
7. Cerebral palsy
8. Mental retardation
9. Fetal Alcohol Syndrome/Fetal Alcohol Effect

It appears that several of these leading health conditions may have common origins, at least in some cases. Developmental delay, language and speech delay, cerebral palsy, and mental retardation are frequently related to low birth weight.

Teenage women have a significantly higher than average risk of giving birth to low weight infants. On the Navajo Reservation and throughout Indian country teenage women have much higher birth rates than the U.S. as a whole. Between 1981-1983, approximately one out of every 5 Navajo babies was born to a teenage mother. Almost 6% of these babies were underweight (less than 2500 grams) at birth. Thus if large numbers of Navajo infants are born to teenage mothers, they have an increased risk of having a low birth weight. If appropriate speciality care is unavailable, these infants are likely to develop serious debilitating health conditions leading to disabilities.

Bacterial meningitis is another medical condition which may lead to problems of developmental delay, seizure disorder, orthopedic disorders, language delay, and mental retardation. Bacterial meningitis is also a major cause of death among Navajo infants and young children. In 1968-1973, bacterial meningitis was found to occur in Navajo children at a rate of 27.7 per 100,000 population, compared to 5.9 in Bernalillo County, New Mexico, in 1964-71 (Coulehan et al., 1976). In 1973-1980, the incidence at Navajo of meningitis related to Haemophilus influenza was 152 per 100,000 population (Centers for Disease Control, 1986). In another study of Southwestern American Indians, 30% of patients surviving this disease had documented persistent neurological abnormalities including intractable seizures, mental retardation, developmental delays, hemiplegia, quadriplegia, language delays, hearing loss, cortical blindness and organic hyperactivity. Seven percent of patients contracting the disease subsequently died. (Yost et al., 1986).

The relationship between bacterial meningitis and Haemophilus influenza (Hi) has been well-documented. Efforts to reduce the incidence of Hi have been hampered by the fact that most Indian children contract Hi before the age of 2 years, when existing vaccines are largely ineffective. Efforts to develop an improved vaccine are underway (see Alaska report for more discussion).

Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effect (FAE) are other disorders associated with developmental delay, seizures, orthopedic disorders, cerebral palsy, and mental retardation, among others. FAS has emerged over the past few years as possibly the major cause of serious health problem among Navajo Indians. A preliminary study conducted by May (1984) on the Navajo Reservation found that one of every 690 births exhibited FAS and/or FAE symptoms. The prevalence of the condition was 1.6 per 1,000 population in ages 0-14. Fetal Alcohol Effect (FAE), a milder form of in-utero damage, was found in a ratio of 1:1 with FAS at Navajo. The prevalence of FAS and FAE in the Navajo population aged 0-14 was found to be 2.5 per 1,000. This rate is roughly comparable to the rates reported in Sweden, France, and Seattle, Washington, and is slightly lower than the rate found in the Pueblo Indians (2.7 per 1,000); it is significantly lower than the rate found in two Plains tribes, Apache and Ute (19.5/1,000). However, more research must be done to validate the preliminary study. The Navajo FAS rate of 1.6 may also be compared with a rate of 4.2 found in the Alaska Native population (Alaska Area IHS unpublished study). This difference may reflect real differences in the populations, or be related to the accuracy with which the condition is being reported on the respective reservations.

Fetal Alcohol Syndrome is presently the subject of an IHS-wide education campaign. However, funds are limited and local areas are pursuing efforts on their own initiative.

Physical disabilities. Disability from trauma due to accidents is high among the general Indian population (May, unpublished), although the prevalence and range of disability from this source has not been quantified. As accidents are the leading cause of death for both sexes on the Navajo Reservation, it can be assumed that disability from this cause is also high at Navajo. Amputations result from injuries (35-40 per year), diabetes, and a small number of industrial accidents (Swett, 1987). It is evident that more information should be gathered on the types and prevalence of disability due to accidental trauma.

Swett (1987) provides the following information regarding Navajo physical disabilities: "Our incidence of spinal cord injury have come down to near the national average in the past five years with the improved emergency capabilities all over the Navajo. List follows:

Spinal Cord Injuries	Actively followed 190 SCI patients. Patients who are partial injuries are removed only if they need no services. 7-10 new patients per year average.
Amputees	There are about 500 on the Navajo, mainly lower extremity. Most are over 40 years old and at least 50% are secondary to diabetes. Most do not require Vocational Rehabilitation services, partially due to age.
Head Injury	There are approximately 400 head injured people who have some residual disability. There are probably approximately 15 new disabilities per year.
Stroke, Heart	There are very few in number and attacks & other usually involve people in an age neurological group older and not interested in diseases being retrained for any occupation."

Rates of epilepsy and seizure disorders have been found to be significantly higher among several southwestern tribes than in non-Indian comparison communities. The difference in rates was primarily caused by accident trauma; many of the accidents were alcohol-related (Levy, 1981).

Behaviorally-related disabilities. Four of the ten leading causes of death in the Navajo IHS Area in 1981-83 were related to behavioral problems. These leading causes of death were:

	Rate per 100,000 pop.	Times Greater than the U.S. rate
1. Accidents & adverse effects	158.7	4.3
2. Suicide	15.4	1.3
3. Homicide	15.0	1.6

Within the category of accidents, motor vehicle accidents was the major causal subcategory with a mortality rate of 95.9 per 100,000 population, 5.0 times the rate for the U.S. as a whole (Navajo Area IHS, 1986).

Chemical dependency. Alcoholism has been identified by the Health and Human Services Committee of the Navajo Tribal Council as the leading health problem among Navajos. Population groups at highest risk and in need of prevention or treatment services include school-aged youth, those jailed or hospitalized for alcohol-related problems, inhalant abusers, and families relocated from the land dispute areas who are under psychological stress. Families experiencing domestic violence are also in need of special help (Navajo Health Systems Agency, 1982).

A survey of 5,545 Western Navajo youth aged 8-10 years conducted by the Navajo Tuba City Adolescents Substance Abuse Program found that 60% used alcohol, 21% used marijuana, and 4% reported deliberate inhalation of toxic substances (Navajo Health Systems Agency, 1987).

Alcoholism is a special problem among the Navajo, as with most other Indian tribes, because of the widespread nature and severity of the problem and the unique conditions and factors contributing to alcohol use and abuse among Indians. The Navajo Reservation is a "dry" reservation, prohibiting the sale of alcohol within the reservation boundaries. Those individuals wishing to purchase alcohol have to drive long distances off the reservation to purchase the liquor. Road conditions to and from the reservation can be primitive, compounded with the length of the drive and the condition of the driver, vehicular accidents are likely.

Mental disorders. The prevalence of disabling mental and emotional disorders on the Navajo Reservation has not been established; however, it can be assumed to be very high, based on the leading causes of death and other indicators of social dysfunction such as alcoholism.

The following illustrates the percent by category for inpatient diagnosis for mental disorders in 1985:

Category	Percent
1. Non-organic psychotic conditions	34%
2. Other mental disorders	19%
3. Neurosis/personality disorders	17%
4. Acute stress reactions	17%
5. Organic psychotic conditions (excluding alcoholism)	13%

Forty-four percent of mental health hospitalizations were among males and 56% among females. This is in contrast to alcohol and drug abuse hospitalizations where 60% and 85 %, respectively, were among males.

The Navajo Nation Master Health Plan estimates the number of developmentally disabled Navajos at between 9,000 and 13,500 persons, a prevalence of between 53 and 79 per 1,000 population. The Plan also reports that, of this estimated number, 3,000, or less than 21%, have been identified and are receiving services. (Navajo Health Systems Agency, l982). Swett (1987) reports that the Navajo Area IHS has 1800 developmentally delayed individuals on its computerized data base. IHS statistics show about a 3% incidence of developmental disability in newborns.

Sensory Disorders: Serious astigmatism (greater than 2 diopters) has been found to be extremely prevalent among Navajo children; 26% compared to approximately 2% in the total U.S. population (Garber, 1981). Similar vision problems have also been seen among 75% of an Alaska Native cohort (See Alaska report).

Otitis media, an infection of the middle ear, is extremely prevalent among Navajo children. In a mass screening from 1978 to 1980 on the Navajo Reservation, Nelson and Berry (1984) found that 4.0% of the children had eardrum perforations, 2.3% middle ear infusions, 1.9% eardrum atelectasis, and 0.4% sensorineural hearing loss. The prevalence of hearing loss was artificially low because the children with bilateral moderate to severe loss were for the most part in special programs off the reservation and were not captured in this study. Navajos appear to be more seriously affected than most other Southwest tribes.

Although the prevalence of permanent deafness due to otitis media does not appear to be extremely high, the presence of the disease in 4.2% of Navajo children (Nelson and Berry, 1984) has very serious implications for the psychological and social development of these children (McShane, 1982), as well as for language acquisition and school performance.

Orthopedic related problems. There is some controversy over the disabling effects of congenital hip dysplasia, a condition found among the Navajo with an incidence of 1.7% (Pratt et al., 1982). Corrective surgery performed by the Indian Health Service was found to be more disabling than the dysplasia itself. Fusion of the hip joint resulted in restriction of the joint limiting such activities as horseback riding, a necessary task for many sheep and cattle ranchers. Uncorrected hip dysplasia may lead to an abnormal gait but has not resulted in frank hip dislocations since the use of the cradleboard has decreased.

Other medically related problems. In a cross-sectional study of Navajo diabetics, retinopathy was found in 50% of all patients with a duration of known diabetes of 5 or more years. In Navajo and Hopi patients who had known diabetes ten or more years, 57% had retinopathy, 40% had nepropathy, 21% had peripheral neuropathy, and 28% had either amputations or peripheral vascular disease. The development of these complications appears to be similar to those in other races (Rate et al., 1983).

The death rate from cancer at Navajo, though low by comparison with the U.S. rate, increased by 23% between 1972-74 and 1980-83 (U.S. Contress,OTA, 1986). This indicates a probable increase in the prevalence of cancer on the reservation.

Two recent studies have documented a connection between increased rates of lung cancer and radiation exposure through employment in the uranium mines (Samet et al., 1984; Gottlieb, 1982). It can be expected that as the present population of current and former uranium miners age, the rate of this disabling condition will increase. Non-miners exposed to mill tailings and contaminated water may also be developing cancer at higher rates in the next few years.

Low level radiation and other results of uranium mining and milling are presently being studied as a possible cause of birth defects among the Navajo in the Shiprock area. Preliminary results show some evidence of birth defects during the late 1960s and the 1970's (Norwood, 1985; Goodman, 1984). Also, the 1980-1982 age-adjusted Navajo death rate from congenital anomalies was 8.4 per 100,000 population, 1.4 times the U.S. All-Races rate and higher than either Alaska or Billings.

American Indians with Disabilities in the Billings Area

The IHS Billings Area consists of the states of Montana and Wyoming. The state of Montana, located in the Northwestern United States, is home to the Blackfeet, Crow, Assiniboine, Gros Ventre, Sioux, Salish, Kootenai, Northern Cheyenne, and Chippewa-Cree tribes. There are seven reservations in the state: five located along the northern border (Flathead, Blackfeet, Rocky Boy, Fort Belknap, and Fort Peck), and two located on the southern border (Crow and Northern Cheyenne). The state of Wyoming includes the Wind River Reservation in Wyoming on which live the Shoshone and Arapahoe.

According to the 1980 U.S. Census, the state of Montana Indian population (37,300) comprised 4.7% of the total state population (786,690). Forty-nine percent of the Indian population was male and 51% was female. Fifty percent of the population was below the age of 20 years. The total 1986 IHS service population for the reservations in the Billings Area (Montana and Wyoming) was 44,233 and is increasing at the rate of approximately 2.9% per year (IHS population estimates). In addition to the Indian people living on the reservations, there is a sizeable Indian population elsewhere in the state, primarily in the urban areas. The 1980 U.S. Census reported the urban Indian population in Montana to be approximately 9,995 (U. S. Census, 1980). The Wind River service population constitutes 12.4% of the Billings Area IHS service population.

The Billings Area tribes are related to a group called the Plains Indians, who are found throughout the Western United States east of the Rocky Mountains. Plains tribes share certain social, religious and cultural similarities. They also share a harsh climate with cold, snowy winters and extreme heat in summer.

The Indian Health Service is the major provider of health care to the Montana Indian population, maintaining three small, rural IHS hospitals, nine outpatient centers and three health stations. The Indian Health Service also provides financial assistance to Urban Indian Health Programs in seven urban areas (Anaconda, Billings, Butte, Great Falls, Helena, Miles City, and Missoula) to provide limited outpatient and referral services to urban Indians.

One of the nation's three federally-funded Indian Vocational Rehabilitation Programs is situated on the Rocky Boy Reservation which serves the Chippewa-Cree tribes. This program is administered by the Stone Child College, one of several Indian colleges in the state.

Educationally and economically, the Montana Indian population is very disadvantaged. In 1980, only 56.0% of the Indian population aged 25 years and over had graduated from high school as compared to 74.4% for the state as a whole. Five percent of Indians had four or more years of college as compared to 17.5% of the total state population. In 1980, the median Indian family income was $10,763 while the state-wide median was $18,413. Thirty-one percent of the Indian families were below the poverty level in comparison to 12.3% of all Montana families (U. S. Bureau of the Census, 1980).

There are several industries in Montana which may contribute to health problems and possibly disabling conditions among the state's population. These include transportation, agriculture, manufacturing, and mining (Montana Division of Workers' Compensation Annual Report). Petroleum, coal, and natural gas are the principal minerals in order of value. There is no mining on any of the reservations, but coal is mined in open pits near the Crow Reservation; some Indian people may be employed there. A tailings pile near the Wind River Reservation (Wyoming) is scheduled to be removed soon.

Source of data and limitations. Most of the data collected for this analysis came from the Billings Area Indian Health Service or the Indian Health Service national data bank. The IHS hospital and clinic data on services provided in selected ICD-9 categories for FY 1986 was useful in indicating major health conditions likely to result in a disability, although the resource-based nature of the IHS health system limited the ability of the data to present a complete picture of service need or demand. The pediatric handicap register, formally maintained by the Billings Area Office since 1985, was more useful in estimating the prevalence of various disabling conditions. However, the degree of completeness of the register is unknown, and the register is limited to the pediatric population. Additionally, the register reporting categories are not mutually exclusive. Individuals may appear in more than one category in the register. The IHS is continuing to update, refine, and informally train staff to identify and report handicapped children in the service area.

The Bureau of Indian Affairs, the State Vocational Rehabilitation Program, and the State Developmental Disabilities Program were contacted for information but could not provide data with enough specificity to be helpful. Finally, a few research studies performed on disabilities among Montana Indians were found; it appears that this Indian population is not as frequent a subject for health research as are many other Indian groups.

Aside from the incomplete IHS pediatric register and the few research studies cited, none of the data obtained was useful in calculating the prevalence of specific disabilities. However, inferences may be made from mortality statistics and from the IHS inpatient and outpatient data, and the perceptions and advice of numerous professionals working in the field were drawn upon to supplement the available statistics.

A major limitation with prevalence data calculated from the IHS pediatric register for the Billings Area include the fact that the population denominator could not be accurately determined. The "IHS service population" of children under the age of 18 was used, but an unknown percentage of these children receive their care from sources other than IHS and so would not be identified by IHS providers. The cases identified on the register represent those children currently in care or being processed for services. Children who received services before the register was put into place do not appear on the register. Different disabling problems may appear on the register with different degrees of completeness, depending on whether or not IHS is the logical service referral for the child with disabilities.

Pediatric Handicap Register. According to the pediatric handicap register maintained by the Billings Area Indian Health Service, the following are the leading conditions found among the Billings Area children (See Appendix C-6 for total numbers of disabled in each category, male/female ratios and prevalence rates):

1. Seizure Disorder
2. Pulmonary disorders
3. Developmental delay
4. Language & speech delay
5. Problems related to prematurity
6. Fetal Alcohol Syndrome
7. Cleft palate/cleft lip

This register has been maintained informally for several years. However, the completeness of the register is unknown at this time (Lewis, 1987). Several of the major reported conditions on the Billings Area pediatric register are the same as those found at Navajo; these include seizure disorder, developmental delay, language and speech delay, problems related to prematurity, and Fetal Alcohol Syndrome. However, differences also exist. The Billings Area has a much higher rate of pulmonary disorders. Cleft palate/cleft lip is also found at a much higher rate in the Billings Area. Rates of reported meningitis cases are considerably lower at Billings than at Navajo.

As at Navajo, seizure disorder, developmental delay, and language and speech delay may be associated with Fetal Alcohol Syndrome. Based on these data, the rate of FAS is higher in the Billings Area (2.4 per 1,000) than at Navajo (1.7 per 1,000).

The rate of seizure disorder found among Billings Area Indian children based on the pediatric register (5.8 per 1,000 population) is unusually high when compared to the 1980 U.S.-All Races rate of 3.5 per 1,000 (Gortmaker, 1984). Fetal Alcohol Syndrome and accident trauma may contribute to this high rate, but further investigation of this disabling condition is needed. The high rate is even more alarming when one considers that it probably significantly underreports the problem due to data inadequacies. Although no studies have been performed on the incidence of Fetal Alcohol Syndrome among Montana Indians, a study of the Apache and Ute, other Plains Indian tribes, revealed an extremely high incidence and prevalence of Fetal Alcohol Syndrome and Fetal Alcohol Effect. The prevalence among children aged 0-14 years was 10.7 per 1000 for FAS and 19.5 per 1000 for FAE (May, 1984). The Billings IHS pediatric register is not a good data source for estimating this problem among Montana Indian children because many FAS children appear on the register identified with other related problems. However, five of the six most common disabilities listed on the Billings Area IHS pediatric handicap register (pulmonary disorders, developmental delay, language and speech delay, FAS itself, and cleft palate and cleft lip) are all features associated with FAS and FAE (Streissguth, 1986).

The incidence of cleft palate has been observed to be extremely high among Montana Indians. In a study of 363 Montana babies born with this anomaly from 1955-1965, 38 of these babies were Indian, creating an incidence of clefting in this population of 3.5 per 1,000, compared to 2.0 per 1,000 for the Caucasian population (Bardanouve, 1969). In the U.S. in 1980, the incidence of this problem in all races was 1.3-2.0 per 1,000 (Gortmaker, 1984). Cleft palate and lip are found at higher than average rates among FAS children. Cleft palate and lip have also been linked to maternal trauma and ingestion of certain drugs during the first trimester of pregnancy.

Physical disabilities. By far, the most serious cause of death and medical treatment in Montana in recent years has been accidents and adverse effects. In 1980-1982, the death-rate in this category was 236.1 per 100,000; this was 5.9 times the US All-Races rate and was higher than either Alaska or Navajo. The motor vehicle death-rate was almost seven times the U.S. rate (U.S. Congress, OTA, 1986). Even compared to the high rates of hospitalization due to accidents found IHS-wide, the Billings Area stands out. The second leading cause of hospitalization in Billings, accidental falls, resulted in a 1986 hospitalization rate 2.1 times higher than the IHS-wide rate in that year. The fifth leading cause of hospitalization in that year was "injuries due to motor vehicle accidents"; Montana had a rate 2.0 times the IHS-wide rate. "Injuries by others" was the eighth leading cause of hospitalization; Montana had a rate 1.9 times the all-IHS rate. Low back pain, and injuries to nerves and the spinal cord caused hospitalization in Montana at 1.9 and 2.1 times the all-IHS rate.

Although it has not been documented through research, the above data imply that the prevalence of disability due to accidents and injuries is probably very high among Montana Indians. Personal communication with present and former IHS medical personnel confirm this impression (Neely, 1987; Lewis, 1987).

Chemical dependency. The 1980-1982 age-adjusted death-rate from liver cirrhosis was 9.8 times that of the U.S. All-Races rate and almost four times that of either the Alaska or Navajo populations. Liver cirrhosis is often used as an indicator of the prevalence of alcoholism in a population; thus, it appears that alcohol abuse is a problem of critical proportion in Montana. As another indicator of the alcohol abuse problem, the hospitalization rate for Billings Indians for alcohol was substantially greater than that of both IHS and U.S. short-stay hospitals (OTA , 1986). In 1986, the Billings Area hospitalization rate for alcohol dependence syndrome was 134.2 per 100,000 population, over twice that of the IHS as a whole (57.9 per 100,000). The Billings rate was also 1.8 times the Alaska rate and 3.5 times the Navajo rate.

Mental Disorders. The 1980-82 age-adjusted death rates for accidents, homicide, and suicide were from three to ten times the rates found in the U.S. population as a whole. They were also significantly higher than the rates for those causes of death in the Alaska and Navajo Indian population.

The recent epidemic of suicides among young people on the Wind River Reservation brought nation-wide attention to the critical state of mental health in the Billings Area. Clearly, this part of Indian country is exhibiting extremely poor health in large part due to mental and emotional reasons.

Sensory disorders. Although outpatient and inpatient visits for otitis media were quite high, indicating a high prevalence of this disease in the population, Billings IHS staff do not believe the problem is necessarily more serious among Montana Indians than Indians in other areas. An active outreach program, combined with an otitis media surgical team at the Browning IHS hospital may increase service utilization. As mentioned in the discussion on the Navajo Area, otitis media is a disease which may not cause significant lasting deafness in the population but can seriously and permanently hamper a child's language and social development by introducing temporary hearing-loss at a critical time in his development. The presence on the pediatric handicap register of language and speech delay as the fourth most common handicapping condition is very probably related to the otitis media problem.

Other medically related problems. Fiscal Year 1986 inpatient and outpatient visits to the Billings Indian Health Service facilities were highest for the following categories of physical disability:

Inpatient:	Outpatient:
Diabetes	Respiratory System
Accidents/injuries	Accident/poisoning/violence
Malignant neoplasms	Endo./nutri./metabolic
Chronic obstructive Pulmonary disease	Ear diseases

Morbidity and mortality statistics as well as personal communication indicate that diabetes is a major cause of disability among Billings Area Indians. The crude death-rate from diabetes increased 49% between 1975 and 1982; 16.4 per 100,00 population to 24.5 per 100,000 population (OTA, 1986). The 1980-82 age-adjusted death-rate for diabetes in Montana was 38.4 per 100,000 population. This was 3.9 times the US all-races rate and over twice the rates in either Alaska or Navajo.

IHS hospitalization and outpatient data also indicate a high prevalence of the disease over the last few years. The inpatient diagnosis rates for this disease in 1981 and 1986 were over 1.5 times the rate for all IHS hospitals and were over twice those of either Navajo or Alaska. The inpatient rate actually declined by 2% between 1981 and 1986. Personal communication with two Montana tribal health organizations indicated that diabetes is seen as a major disabling condition in the area with access to services and information on kidney transplantation and other related health issues sorely lacking.

American Indians with Disabilities in the Alaska Area

The state of Alaska is home to approximately 76,055 Native Alaskans (IHS, 1986). Approximately 30% of the Native population resides in urban areas; the remainder (70%) reside in 220 small rural native villages. The term Native Alaskan includes members of many different tribes, which may be categorized into three large groups: (1) Inupiat (Eskimos) constitute 53% of all Native Alaskans; (2) Indians, including inland Athabascan and Southeastern Tlingit and Haidas, who represent 34%; and (3) Aleuts, who represent 13% (U.S. Bureau of the Census, 1980).

All Alaska Natives are within the service area of the federal Alaska Area Native Health Service (IHS) but are also eligible for the network of health services provided by state and local agencies, village corporations, regional corporations and private health insurance. As a result of the Alaska Native Claims Settlement Act of 1971, twelve regional Native Corporations were formed to provide health and social services, as well as economic development, to their Native shareholders. Eleven of the twelve corporations established nonprofit health corporations which have contracted with the IHS under P.L. 93-638, the Indian Self-Determination and Educational Assistance Act, for a wide range of field, ambulatory, and hospital-based health services.

The Alaska Area Native Health Service maintains a 170 bed referral hospital in Anchorage and four small hospitals in other communities. Native organizations manage two additional hospitals under P.L. 93-638 contracts. Further, there are five IHS and three P.L. 93-638 health centers and 172 health stations. In most Native villages, Native Community Health Aides are responsible for preventive, diagnostic, and emergency care with the assistance of physicians and nurses via video satellite hook-ups. Air transportation is necessary for any health services which cannot be provided by the Community Health Aides.

The climate of Alaska is diverse and frequently harsh; it can vary from 95 degrees Fahrenheit in the interior in summer to -70 degrees Fahrenheit in the winter, and a wind-chill of -100 degrees Fahrenheit is not uncommon. The effect of climate on transportation and communications is considerable, and rural communities not infrequently lose all contact with the outside world during periods of inclement weather. Air transportation is a major means of travel between the towns and cities. Transportation and distance have the effect of making many health services expensive or inaccessible to those in need.

Because of the isolation of most Alaskan communities, utilities are limited and self-contained. Electrical generation, running water, and solid-waste disposal systems are absent or minimal in many villages. Many communities have only one telephone.

The Alaska Native population comprises approximately one-seventh (16%) of the total population of Alaska. Forty-nine percent of Natives are female, and 51% are male. The population is very young, with 47% below the age of 20 years (U.S. Bureau of the Census, 1980).

The Native population is generally poor and educationally deprived. In 1980, 25.3% of Native families were below the poverty level as compared to 8.6% of all families state-wide. Only 42.6% of Native persons over the age of 25 years were high school graduates, and only 3.5% of those had completed college (U.S. Bureau of the Census, 1980).

The Alaskan Department of Labor reports that the percentage of Alaska Natives with jobs is roughly half the comparable percentage for non-Natives. Three major factors are cited to explain this low labor-force participation. Many unemployed Natives are said to have inadequate experience, education, training, or job skills. Racial discrimination is also a reality. The third factor is that employment opportunities are extremely limited in the small isolated villages where many Natives live.

Major economic activities in the state of Alaska include construction, service industries, transportation, wholesale and retail trade, and mining. Native people are also employed in the fishing and timber industries, by the federal government, and by Native and village corporations.

Environmental issues related to Alaska Native health and disability include trauma and injury sustained on fishing boats (which are completely unregulated) and serious physical injuries (crushed and broken limbs, hand, neck, and spinal injuries) suffered in the largely unregulated logging industry. An open-pit lead and zinc mine is being developed on Native Corporation land near Kotzebue; this industry contains additional potential hazards of lead and other heavy-metal poisoning, and silicosis. A common hazard of the extremely cold climate is frostbite which sometimes results in amputated fingers, toes, feet, noses, and ears. The stress of the continuing cold on the human body may also increase susceptibility to infectious diseases such as tuberculosis, influenza, meningitis, viral hepatitis, and rheumatic fever.

Source of data and limitations. Data for this analysis were obtained from numerous sources. The Alaska Area Native Health Service (IHS) inpatient and outpatient service statistics for FY 1986 were obtained, as was the pediatric register maintained by the Alaska Native Medical Center in Anchorage. IHS environmental health staff also provided information on injuries and on environmental hazards. Mortality statistics were taken from the Congressional Office of Technology Assessment (OTA) Report published in 1986.

Information was received on major disabilities exhibited by Southwestern Alaska Native children in a 25-year old cohort study conducted by the federal Centers for Disease Control. Data on Alaska Native clients of the State Developmental Disabilities program were also collected.

Recent studies completed by the Alaska Native Health Board on Fetal Alcohol Syndrome and suicide and a study on Native hearing loss by the Anchorage-based Center for Adult Deafness were also reviewed as were several studies performed by the State Department of Health Epidemiology Office. Population data and related statistics came from the Alaska Native IHS and the 1980 U.S. Bureau of the Census data.

As found in the above analyses of Navajo and Montana, neither IHS nor the research literature presents a comprehensive picture of disabilities among Alaska Natives. Mortality statistics and health service utilization data help to highlight problem areas but do not provide good statistics on the prevalence of the conditions. The IHS pediatric handicap register is a good start on obtaining this information, but it does not cover all Native children in outlying areas; its completeness is unknown and varies from one condition to another, depending upon whether the child is referred to the Alaska Native Medical Center for treatment (Miner, 1987). The register also may not contain numerous Native children who received services from IHS before the register was implemented in 1981. The service data provided by the state program on developmental disabilities is also limited in that state funds are not available to provide these services to all those in need. In addition, Alaska Natives in isolated areas may not use the services at the same rate as the rest of the population.

The inpatient statistics provided by the IHS for its Alaskan direct and contract hospitals are incomplete for 1986. Although services provided by IHS and its contract hospitals are included in the 1981 report, the 1986 reported data do not contain the contract hospital admissions which constitute approximately 10% of the total admissions. Therefore, it is problematic to compare the 1981 and 1986 inpatient data for this state.

Pediatric Handicap Register. According to the Alaska Native Medical Center Pediatric Handicap Register, the leading developmental disabilities among Alaska Native youth are:

1. Problems related to prematurity
2. Seizure disorder
3. Congenital heart disease
4. Mental retardation
5. Miscellaneous neuromuscular disorders
6. Orthopedic disorders
7. Meningitis
8. Pulmonary disorders

Appendix C-7 shows the major disabling conditions reported on the pediatric handicapped register for the Alaskan pediatric population. Because the completeness of the pediatric register and the percentage of the Alaska native population using IHS services are both unknown, it is not advisable to calculate prevalence rates for comparison with developmental disabilities nationwide. When comparing these rates with studies of singles diseases among Alaska Natives conducted by IHS and other organizations, these rates are found to be quite low, supporting the contention that the register represents a low count of actual disabilities. However, these data provide the best available picture of the spectrum of developmental and other disabilities in the Alaska Native pediatric population.

One problem listed above which appears to be of particular concern and significance is "seizure disorder." The prevalence rate calculated for this problem with the above data is 9.1 per 1000 population. When compared with a U.S. All-Races rate of 3.5 per 1000 population (Gortmaker, 1984), a serious problem is indicated, particularly when considering that the Alaska rate is probably considerably under-representing the problem. A connection with an extremely high incidence of bacterial meningitis among Alaska Natives is highly probable.

Bacterial meningitis is a major cause of developmental disability and death among Indian and Alaska Native populations. Persistent neurologic abnormalities, such as intractable seizures, mental retardation, quadriplegia, and language delays are not uncommon among those who contract the infection. The hospitalization rate for Alaska Natives with bacterial meningitis was 4.2 in 1986, 68% higher than the overall IHS rate, but quite similar to the rates in Montana (4.7%) and Navajo (4.3%).

Although its results are not reflected in the incomplete data on the pediatric register, a 1981 study on bacterial meningitis reported an incidence of 409 per 100,000 population among Alaska Natives (Ward, et.al., 1981). The Centers for Disease Control placed the 1980-82 incidence of Hi meningitis at 264 per 100,000 among all Alaska natives and reported a rate of 440 per 100,000 among Southwestern Alaska Eskimos in 1971-80. These rates compare with a rate of 70 per 100,000 for Alaska non-natives and a U.S. rate of 19-69 per 100,000 population in 1960-1978 (Center for Disease Control, 1986). Another study reported a U.S. rate of 51 to 77 per 100,000 (Cochi, et al., 1985). The problem of Hi meningitis is also shared by other American Indian groups. In 1973-80, Navajo experienced an incidence of 152 per 100,000 population (Centers for Disease Control, 1986).

A major cause of bacterial meningitis among Alaska Natives is Haemophilus influenza (Hi); a high incidence of this disease has been documented in this group for at least 20 years. Recent epidemiologic investigations conducted by the Centers for Disease Control's Arctic Investigations Laboratory found that Alaska Natives have an incidence of invasive Hi type b (Hib) 3.2 times that of Alaska non-natives. Compared with non-natives, the relative risk of this disease in children under 5 years of age in 1980-1982 was 3.8 in Indians and 6.2 in Eskimos/Aleuts. Native children tend to develop Hib at a much earlier age than non-natives; 80-90% of all Hib infections occur by 18 months of age in this population. Factors which may reduce the incidence of Hib include breast feeding and possible future development of a vaccine effective on children under age two (Centers for Disease Control, 1986).

Another major health problem contributing to disability among the Alaska Native population is Fetal Alcohol Syndrome (FAS). Fetal Alcohol Syndrome consists of a group of physical and developmental abnormalities present in an infant which are caused by maternal alcohol consumption during pregnancy. Characteristics of the disorder include impaired intro-uterine and post-natal growth, typical abnormalities of facial development, and mental retardation. Cleft palate and heart defects are often present as well. An unpublished study conducted by the Alaska Native Health Service of Alaska Native children born from 1981-1986 found a total of 56 children with Fetal Alcohol Syndrome; the resulting incidence of FAS in this population was 4.2 per 1,000 births. Other studies found rates of 1.6 per 1,000 at Navajo and 1.7 per 1,000 for all races in Seattle, Washington. Thus, the incidence of this problem among Alaska Natives is over twice that of other these populations. When the difficulty of case-finding among Alaska Natives is taken into account, it is believed that the true incidence may be higher than 4.2 per 1,000. The incidence of children with Fetal Alcohol Effect was not investigated in the Alaska study, but it is thought to be about 10 cases of FAE for every diagnosed case of FAS. Overall prevalence of FAS and FAE in the Alaska Native population cannot be estimated at this time (Hild, 1987).

As a result of the discovery of this disabling condition, the Alaska Native Health Board and the Alaska Native Health Service have undertaken a joint program of education, training, and referral to provide services to health professionals, pregnant women, and children at risk.

An on-going cohort study of Yupik Eskimo children (now aged 0-17 years) in Southwestern Alaska conducted by the Centers for Disease Control reports handicapping conditions in 108 of 530 children, or 20.4% of the study population. When compared with the state estimate that 3.14% of the total Alaska population suffers from "substantial handicaps" (Three-Year Plan, n.d.), this percentage seems extraordinarily high. See Appendix C-6.

The number one health problem among Southwest Alaska Natives reported by the Centers for Disease Control (CDC) was heart problems, including heart murmurs, functional heart disease, and valvular heart disease. These problems were seen among 72 Native children at a rate of 136 per 1,000 population. The second leading health problem reported was bronchiectasis, an chronic infection of the bronchial tubes which can result in significant disability. The development of bronchiectasis in the cohort members was associated with a measles epidemic which also caused at least 10 deaths (Center for Disease Control, 1986). The third most commonly found problem was mental retardation, reported at a rate of 30 per 1,000 Alaska Native population. This is 1.2 times the rate reported for the U. S. population as a whole (Gortmaker, 1984).

Behaviorally related problems. A review of available mortality and morbidity data for Alaska Natives disclosed several patterns of health problems which may lead to physical disability. For example, high accident rates probably contribute significantly to long-term physical disabilities. Accidents and adverse effects are reported to be the leading cause of death among Alaska Natives. For the years 1980-82, the Indian Health Service reported that the Alaska Native accidental death rate was 5.3 times that of the US All-Races rate. Although the motor vehicle death-rate was slightly above that of the U.S., the category "all other accidents" had a death rate of 183.5, 10.2 times that of the U. S. population.

A review of IHS hospitalization data for 1981 and 1986 shows that Alaska Natives had hospital visits well above the IHS average for motor vehicle accidents, accidental poisoning, accidental falls, accidents due to fire, self-inflicted injuries, injuries by others, and injury to nerves and spinal cord. The Alaska rates were, in general, higher than rates for those problems at Navajo and lower than those in Montana. However, difficulty in access to hospital services may be a factor in these comparisons.

A review of injuries resulting in hospitalizations in Alaska IHS hospitals from FY 1981 to FY 1985 shows that out of 33 injury causes, one category, "falls", accounted for 20% of all injuries, almost twice the number of any other category. Injuries purposely inflicted and suicide attempts were the second and third highest categories, respectively. The ratio of male to female injuries was over 3:1. The rate of injury to nerves and spinal cord was 23.4/10,000, over twice the all-IHS rate 11.2/10,000. For Alaska Native children under 18 years of age, the rate of disability due to accidents was 2.8 per 1,000 population according to the pediatric register.

Although statistics on disability as a result of injuries are not available for all ages, the above data indicate that trauma and accidents may well be a major source of disability. Falls, violence, and suicide attempts are of particular concern.

The 1980 U.S. Census reports work disabilities, public transportation disabilities (i.e. individuals who have difficulty using the public transportation system), and persons over the age of 65 years with public transportation related disabilities. From this self-reported information (see Table 11 below), it appears that Alaska Natives in these age groups are disabled at a rate 1.5 to 1.8 times that of the general Alaska population. However, the health conditions contributing to the work and transportation disabilities are not reported.

Table 11

Persons with Work or Transportation Disability in Alaska, 1980

Category	Alaska Native %	Total Alaska Population %	Alaska Native/ Total Rate
Persons aged 16-64 w/a work disability	1.4%	0.77%	1.8
Persons aged 16-64 w/ a public transportation disability	1.5%	0.83%	1.8
Persons aged 65 and over with a public transportation disability	15.0%	9.8%	1.5

Source: U.S. Bureau of the Census, 1980.

Chemical dependency. Alcohol abuse is cited by the Alaska Native Health Board as the most serious health hazard facing Natives and non-Natives in rural Alaska. In a survey of villages, 77 of 110 responding communities listed alcohol abuse as one of three (and often the only) major health concerns. Forty-five percent listed drug abuse as a major concern.

Much of the alcohol use among Alaska Natives is felt to be related to a transition in values that has occurred during the present generation. Many Natives feel caught between the traditional value system and that of the White culture. The outcome is a sense of disharmony and confusion which combines with feelings of powerlessness about job opportunities and leads to alcohol use as a means of escape (Alaska Native Health Board, 1985).

Mental disorders. Although the disabling effects of mental and emotional disorders among Alaska Natives are not documented, morbidity and mortality indicators point to high rates of disability from these causes. The IHS hospitalization rate for "mental disorders" among Alaska Natives was 243.3 per 10,000 in 1986. This rate was 77% higher than the overall IHS hospitalization rate for these problems. Hospitalization due to injury also frequently resulted from mental and emotional problems. Injuries purposely inflicted and suicide attempts were the second and third leading cause of injury hospitalization in 1981-85. Death rates for causes related to mental and emotional disorders were high for Alaska Natives in the 1980-82 period. Rates of homicide, suicide, and liver cirrhosis were over twice the U.S. All-Races rates. Alaska rates were also higher than Navajo but lower than Montana rates for the same causes of death. In a 1983-1984 study by the State of Alaska Epidemiology Office, the annual rate of suicide in Native Alaskans was found to be 43 per 100,000 population, 2.2 times the rate in non-Native Alaskans. The median age of 23 years for Native suicides was significantly younger than the median age of 32 for White suicides. The highest rate of suicide, 257 per 100,000, was in Native males, aged 20-24-years of age, 13 times the state average. Natives in rural areas committed suicide at a rate 1.8 times that of their urban counterparts. Of the Natives tested for blood alcohol, 79% had detectable levels as compared to 48% of the Whites tested (Hladly and Middaugh, 1986).

The 1987-89 three-year state plan published by the Alaska Governor's Council for the Handicapped and Gifted estimates the state-wide prevalence of developmental disabilities (mental retardation, autism, cerebral palsy, and epilepsy) at approximately 3% of all children between birth and age three. However, the plan notes that there is evidence that the prevalence of developmental disabilities may be higher in some areas of Alaska than others, particularly in the Western Region, where most of the population is Alaska Native. The plan notes that in this part of Alaska the incidence of the disability-causing diseases meningitis and encephalitis is among the highest in the world (Three Year Plan, n.d.).

Programs developed to meet the needs of Alaska's mentally retarded adults and other developmentally disabled include the residential care program, vocational programs, and respite care programs. In 1987, the residential programs operated via State contracts reported 156 Alaska Native clients, 99% of whom were mentally retarded. The male/female ratio of this group was 1.5. Alaska Natives comprised 40% of all clients in the residential program. Relative to their representation in the state population, they were overrepresented in this program by a factor of 2.8.

The state vocational programs contained 169 Alaska Natives, 96% of whom were mentally retarded. The male/female ratio was reported to be 1.2. Alaska Natives comprised 38% of all clients in the vocational programs. They were overrepresented in this program relative to the general population by a factor of 2.70.

The state respite care program contained 53 Alaska Natives, 79% of whom were mentally retarded. The male/female ratio was 1.4. Alaska Natives comprised 16% of all clients in this program. These programs are available only in larger cities and towns, not in the many small villages. Alaska Native participation in this program was roughly in proportion to its percentage of the state population.

Although these data contain many variables which make interpretation difficult, it appears that Alaska Natives have either a higher rate of serious mental retardation than the general Alaska population or a lower ability to care for them at home, or both. When looking at these data in conjunction with the elevated prevalence of mental retardation found in the CDC cohort study described above, it appears that the overrepresentation of Alaska Natives in these programs is probably due to a somewhat higher prevalence of mental retardation and also to other factors, such as residence in "bush" areas without in-home support services.

The Alaska Governor's Council for the Handicapped and Gifted estimates that 3.14% of the total Alaska population suffer from "substantial handicaps". Of this group, approximately 45% or 1.4% of the total population, are handicapped because of causes other than developmental disabilities. And although the Governor's Council does not have data broken down by race, the following statement is included in its three-year plan: "The largest single minority group is the Alaska Native population which comprises 16% of the state's population. It is not known whether the incidence of such handicaps is greater among Native Alaskans but health data collected by the Health Systems Agencies and the Department of Health and Social Services Division of Planning indicate that the incidence rates for handicapping conditions are higher among Natives because of poor nutrition and lack of medical care in "bush" areas of the state, where the vast majority of Native people live" (Three-Year Plan, n.d.).

Sensory disorders. Otitis media has been found to occur at high rates in Alaska Native communities and contributes to higher than average rates of hearing impairment among Alaska Natives. Otitis media is the fifth leading cause of outpatient visits to IHS health facilities and also sometimes results in hospitalization. However, a recent unpublished study conducted by the Anchorage Center for Adult Deafness did not find the rate of Native adult hearing impairment to be higher than that in the general population. Village Health Aides reported that out of a population of about 30,000, approximately 500 were hearing-impaired and 60 were actually deaf (200 per 100,000 pop.). However, no actual hearing tests were performed. The researcher reported that further work should be done, as she felt that the study results probably under-reported the problem (Mayer, 1987). A 1981 study by the State Epidemiology Office, which did include hearing tests, documented widespread, high-frequency hearing loss among adult Alaska Natives; as many as 60% of adult males and 8% of adult females were affected (Middaugh, 1983).

Myopia has been identified by health practitioners as a frequent problem for Alaska Natives. A 1981 study of cohort members from 10 villages found the prevalence of myopia (75% with 0.25 diopters or greater) in this cohort to be among the highest observed for a general population anywhere in the world. Young women were significantly more myopic than young men. Astigmatism and myopia were positively correlated (Centers for Disease Control, 1986).

Although the cohort population represents only Yupik Eskimos and cannot be generalized to all Alaska Natives, it is clear that developmental and other disabilities pose a very significant problem to young people in this part of Alaska.

Other medically related problems. The Alaska IHS Environmental Health Program reports that the prevalence of tuberculosis is very high and on the rise among Alaska Natives, and a strain has recently been discovered which is immune to treatment. Tuberculosis of the bone is not uncommon. If it gets into the joints, they must be fused, creating significant disability. The cold and damp of the Alaska climate place a severe stress on the body, and the poorly-insulated, cramped housing exacerbates the problem. The 1980-82 tuberculosis death rate among Alaska Natives, 10.1 per 100,000 population, was nearly 17 times that of the U.S. All Races and was also significantly higher than the Billings (7.5) and Navajo (4.1) rates.

A comparison of the age-adjusted rates (see Table 12) for the three native population groups shows that the Aleuts have a prevalence of diabetes more than three times that of the Eskimo and also slightly above that of the U.S. all races. Although the Native Alaskan overall age-adjusted rate is about two-thirds the U.S. rate, diabetes has been increasing rapidly in the Native Alaskan population; twenty years ago, diabetes was virtually unknown among Alaska Natives. It is believed that Alaska Natives may now have lower rates of diabetes than other Indian populations because of a slower rate of acculturation. But as diets and lifestyles change among Native Alaskans, the prevalence of diabetes may increase.

Table 12

Prevalence of Diabetes Among Alaska Native and U.S. All Races, 1985*

Group	Crude Rate per 1,000 Pop..	Age-Adjusted Rate per 1,000 Pop.
Aleuts	14.9	27.2
Eskimos	4.6	8.8
Alaska Indians	11.6	22.0
All Native Alaskas	8.3	15.7
U.S. All Races	24.7	24.7

* 1980 Source: Dr. Cynthia Schraer, Alaska Area IHS Diabetes Coordinator

Summary. It appears clear that the major disabilities and causes of disability are similar in the three regional areas studied. The patterns of disability in these Indian communities, however, differ significantly from those in the non-Indian community.

Fetal alcohol syndrome, bacterial meningitis, otitis media, diabetes, accidents/trauma, alcohol and drug abuse, and mental and emotional disorders cause disabilities among Indians at significantly higher rates than among non-Indians. Major disabilities include seizure disorder, developmental delay, language and speech delay, mental retardation, pulmonary disorders, vision problems, hearing loss, trauma from accidents, diabetes-related disabilities, alcoholism, and possibly congenital heart disease. The severity of each problem, however, varies between one Indian group and another, sometimes many times over. Any effort to plan for mitigation or reduction of disability among American Indians and Alaska Natives must take into account the particular health status picture of the population targeted for assistance.

Congenital anomalies appear to occur in Indian populations at slightly higher rates than in the U.S. as a whole. Cleft palate is reported to be very high in Montana and birth defects due to radiation may be increasing in Navajo.

It appears that the Indian population as a whole is at significantly greater risk than other ethnic groups for the pattern of serious birth defects due to Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effect (FAE), disabling conditions which have been identified and categorized only since 1973. The high rates of alcohol use and abuse among the Indian and Alaska Native population and the tendency of many alcohol-abusing mothers to have many children pose significant risk to the health and well-being of the Indian family. Within the three regional groups studied here, Alaska has a documented FAS incidence rate over twice that found at Navajo, and in other non-Indian societies. No Billings Area FAS incidence rate has yet been established. Work is now underway in Alaska and elsewhere to address the problem. Particular attention should be paid to identifying cases of children born with FAS, as alcohol abuse is so exorbitantly high among the Indian population in Alaska and Montana.

The high incidence of bacterial meningitis in some Indian communities is a major contributor to developmental disabilities. An extremely high rate for this disease in Alaska and a significantly high rate at Navajo are worthy of mention and intervention. Factors contributing to this disease include chronic otitis media, as well as lack of running water and sanitation facilities in many parts of both Indian communities.

Diabetes is an extremely disabling disease which is on the rise in Indian country and is already of major concern in some areas. It appears that Indians in Montana and Wyoming are experiencing extremely high rates of hospitalization and mortality from diabetes, while Navajo and parts of Alaskan areas have rates well above those of the United States as a whole.

The prevalence of otitis media is high among all Indian and Alaska Native populations and its treatment is a high priority of the Indian Health Service, accounting for a large proportion of outpatient visits to IHS clinics. However, the continuing high incidence of this disease takes its toll on the young as they suffer from hearing impairment during the critical years of language development and social adjustment. It is also suspected that this disease leads to increased rates of permanent hearing loss among Indian and Alaska Native adults.

The extremely high rates of accidents among all three regional areas can be assumed to cause significant disability, although little research has been done in this area. Elevated rates of epilepsy due to accident/trauma have been documented in Southwestern tribes, and the pediatric handicap registers in Alaska and Montana show numerous cases of other disabling problems associated with accidents. Head and spinal cord injuries have been shown to occur on the Navajo Reservation at higher rates than in the non-Indian population. It is believed that alcohol abuse and, to a lesser extent drug abuse, contribute to the high rates of injuries, but mental and emotional disorders may also be major contributors (e.g., suicide attempts as the second leading cause of injury in Alaska Natives).

Although the regional IHS areas studied here exhibit high rates of substance abuse, the hospitalization and mortality data indicate a wide variability in the seriousness of the problem between areas. Although the Navajo Nation cites alcoholism as its primary health problem, it appears that injury, disability, and death due to alcohol abuse are higher among Alaska natives and much higher yet among Montana and Wyoming Indians.

Due to the combination of the above factors, as well as others, work disability among Indians and Alaska Natives is significantly higher than in the general population. U.S. Census statistics show it to be 1.8 times higher among Alaska Natives and 9 times higher among Montana Indians. However, given these figures, it is a matter of great concern that the State Vocational Rehabilitation programs of both Alaska and Montana report a serious underrepresentation of Indian and Alaska Natives among their clients. Obviously, the Indian and Alaska Natives disabled populations are not receiving the rehabilitation services they need. Access to vocational rehabilitation has greatly improved for the Navajo disabled since the Navajo tribe developed its own Indian Vocational Rehabilitation program located on the reservation.

Services for children and adults with developmental disabilities are also difficult to find on reservations and in rural Alaskan areas. Head Start is serving some disabled youth but most of these are speech-impaired. Lack of access to special help and communication problems between Indian/Alaska Native families and non-Indian providers result in many children either not receiving care or in being removed from their homes and tribal environments and placed in off-reservation institutions. A general lack of employment opportunity on the reservations and in "bush" Alaskan villages makes it particularly unlikely that disabled individuals will be able to find suitable employment.

Summary

The data presented in this section indicates very clearly that American Indians as a group have disabling conditions at a disproportionately high rate. Census data indicates a rate of work - related disability for American Indians which is about one and one-half times that of the U.S. working age population as a whole. Age specific mortality data support this, indicating that years of life lost by American Indians through age 65 are one and one-half times greater than years of life lost for all races.

At the same time, service utilization data indicate that American Indians have difficulty accessing services. The rate of hospitalization of American Indians in IHS service areas is substantially lower than the hospitalization rate of the U.S. population. Similarly, the rate at which RSA provides vocational rehabilitation services to American Indians is substantially lower than that for the U.S. population as a whole. The more detailed analysis conducted for selected regions and the State of California suggests that this pattern exists across other agencies serving American Indians as well.

The mortality and hospitalization data consistently indicate that American Indians have substantially more health problems than other population groups in the areas of alcohol abuse, accidents, diabetes, and tuberculosis. American Indian deaths due to influenza and pneumonia, homicide and suicide are also disproportionately high. The influenza and pneumonia deaths are likely due to the remoteness, poor socioeconomic conditions and poor sanitary conditions in which many American Indians live, and are consistent with hospitalization data showing high incidence of infectious and parasitic diseases among American Indians. The high suicide and homicide death rates of American Indians are suggestive of disproportionate amounts of psychological disorders. This cannot be confirmed by the hospitalization data since such disorders are rarely treated by general purpose hospitals on an inpatient basis. The hospitalization data also indicate disproportionate rates of eye and ear conditions, perinatal conditions likely to cause mental retardation or developmental delay, and several types of congenital disorders among American Indians. The analysis of data for selected regions generally confirms the health problems of American Indians described above and provides greater detail and support in the areas of congenital conditions and conditions affecting normal development. This regional analysis confirms that the disproportional rate of many of these disorders do exist for American Indians and suggests at least two important causes, alcohol abuse and bacterial meningitis.

Age specific death rates and hospitalization rates clearly indicate that American Indians tend to have health and disability problems at earlier ages than other groups. These rates are highest of all in relative terms for the ages of 16 through 35. Regional analysis indicates very clearly that American Indians are a diverse group whose health problems vary greatly across regions and even within regions.

The specific analysis of disabling condition within the RSA data presented here is weakened by data limitations, but it does suggest several areas of disability where RSA is currently having difficulty in identifying and serving American Indian clients. RSA service rates to American Indians are particularly low in all areas of sensory disorders and for orthopedic disabilities due to accident and other disabilities due to asthma and allergies, diabetes, speech impairments and skin conditions.

The results cited above have a variety of policy implications. Clearly, many of the major health problems of American Indians like those for other population groups, are lifestyle - related. An agreement between IHS and the BIA was recently signed to begin a coordinated effort to combat alcohol and substance abuse. This agreement sets in motion activities specified under the Omnibus Anti-drug Abuse Act. Among the immediate activities to be accomplished under this cooperative agreement are: community training, assessment of existing and needed programs and services and establishment of minimum standards for new programs, consultation with tribes, assessment of the scope of the problem, and estimation of the funding necessary for a nationwide program of prevention and treatment of Indian alcohol and substance abuse.

This program is promising because calls for a coordinated effort of agencies and in that it places a major emphasis on prevention. Programs of prevention focusing on education would seem to be indicated in several areas. In addition to the alcohol and substance abuse problem, diabetes, accidents, and at least the disabling impacts of congenital and developmental disabilities are likely to be reduced by programs of education.

Increased attention in the area of psychological disorders is also clearly needed. While attention is appropriately being focused on alcohol and substance abuse problems of Native Americans, the high suicide and homicide death rates suggest that other psychological disorders need attention as well. Agency service rates for all psychological disorders other than alcohol and substance abuse appear to be disproportionately low currently. Mental retardation and developmental disabilities are a related problem. There is currently virtually no data reflecting the extent of adult mental retardation among American Indians. Hospitalization data on perinatal conditions and several types of congenital anomalies, and pediatric registry data from selected regions suggest that this problem is a major one among the American Indian population.

Health and disability problems of American Indians clearly vary across regions and even within regions to a large extent. Thus programs need to be developed on a regional and local level coordinating the activities of the relevant service agencies involved and involving tribal governments and consumers in the planning process.

SECTION IV

AN ANALYSIS OF THE LABOR MARKET PARTICIPATION OF AMERICAN INDIANS WITH IMPLICATIONS FOR REHABILITATION

AN ANALYSIS OF THE LABOR MARKET PARTICIPATION OF AMERICAN INDIANS WITH IMPLICATIONS FOR REHABILITATION

In order to understand the issues surrounding the competitive employment opportunities of American Indians with disabilities, it is first important to assess labor market participation factors associated with American Indian employment in general. Also, it is important to identify any differences that may exist between the labor market participation of American Indians when compared to the civilian labor force as a whole to determine if there are any unique labor market participation factors associated with American Indian employment. This section begins with analyses of three factors associated with American Indian employment in general contrasted to total civilian labor force employment.

First, two separate comparisons of unemployment estimates are presented for the American Indian and total civilian labor force. Bureau of Indian Affairs (BIA) estimates of American Indians living on or adjacent to reservations are contrasted to Bureau of Labor Statistics (BLS) figures for total civilian workers. In addition, 1980 U.S. Bureau of Census figures are compared for American Indians living on reservations, American Indians in the total civilian labor force,.and the total civilian labor force. Second, the participation of American Indians in major occupational groupings is contrasted with total employed persons in the civilian labor market. Third, the employment patterns of American Indians in industries on reservations is compared with industrial employment patterns of total employed persons in the civilian labor market.

The last two analyses presented in this section relate specifically to the labor market participation of American Indians with disabilities. An analysis of the work disability status of American Indians contrasted to total population figures is presented. Comparisons of the occupational placements of successfully rehabilitated American Indian and general caseload clients served within the jurisdiction of the Rehabilitation Services Administration are also presented.

The study presented in this section was conducted under the auspices of the Northern Arizona University Native American Research and Training Center (Martin & Frank, 1987).

Sources of Data

Twenty-eight states were targeted for analyses which represented the states served by 11 Area Offices of the Bureau of Indian Affairs in 1981. The targeted 28 states represented nine of the 10 federal regions with the exception of Region III. The states by federal regions were: Region I (Maine), Region II (New York), Region IV (Florida, Mississippi, North Carolina), Region V (Michigan, Minnesota, Wisconsin), Region VI (Louisiana, New Mexico, Oklahoma, Texas), Region VII (Iowa, Kansas Nebraska), Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming), Region IX (Arizona, California, Nevada), and Region X (Alaska, Idaho, Oregon, Washington). According to the Decennial Census conducted by the U.S. Census Bureau in 1980, these 28 states accounted for 90% of the total national American Indian population.

The following data sources were used in compiling the labor market participation information that is presented in this section.

Unemployment Rates of American Indians Living On and Adjacent to Reservations

Information on the unemployment rates of American Indians was obtained from the Bureau of Indian Affairs (BIA) report entitled, Indian Service Population and Labor Force Estimates (1987). This report reflects data collected in 1986 within a total service population of 861,570 persons residing on or near Indian reservations including former reservations of Oklahoma and 86,241 Eskimos, Aleuts and Indians in Alaska. This data represents a little more than half of the Indian population in the United States based upon the 1980 U.S. Census total of 1.534 million.

The unemployment estimates were generated by the local Area Offices of the BIA using whatever information was available for the reservation or tribal entity. The estimates were defined as individuals (16 years and older) not employed, able to work and seeking work.

Total Civilian Labor Force Unemployment Rates

Data on the 1986 civilian labor force unemployment rates was taken from issues of the Monthly Labor Review, U.S. Department of Labor, Bureau of Labor Statistics (BLS), in which unemployment rates were reported for each month in 1986 for all states. Unemployment estimates by state are obtained from the Current Population Survey (CPS) and the Local Area Unemployment Statistics (LAUS). The CPS consisted of personal interviews conducted monthly by the U.S. Bureau of the Census for the BLS. The sample consisted of approximately 59,500 households selected to represent the U.S. population 16 years of age and older. The LAUS program was conducted in cooperation with State employment security agencies.

Unemployment Rates for American Indians Living On and Off Reservations and Total State Population

Two U.S. Bureau of the Census Reports were used to analyze unemployment rates. First, unemployment rates for American Indians living on reservations were obtained from the 1980 U.S. Census of the population, Subject Reports: American Indians, Eskimos, and Aleuts on Identified Reservations and in the Historic Areas of Oklahoma (Excluding Urbanized Areas) (1985) and the 1983 State Summaries of the 1980 U.S. Census of the Population, Characteristics of the Population: General Social and Economic Characteristics.

The Census data was based on a supplementary questionnaire for Indians that was completed when the person identified themselves as Indian in the regular census survey. "The basic sampling unit for the 1980 U.S. census supplementary questionnaire was the housing unit with one or more American Indians, Eskimos, or Aleuts. Five out of every six of these housing units were designated for sample. Approximately 75 percent of the American Indians, Eskimos, and Aleuts living on American Indian reservations and in the historic areas of Oklahoma (excluding urbanized areas) were included in the supplementary questionnaire sample" (p. D-1).

The unemployment figures for American Indians, Eskimos and Aleuts 16 years and older are based on persons identifying themselves as such. The unemployment figures for the total population include all persons 16 years and over and of all racial and ethnic groups except American Indians, Eskimos and Aleuts.

Employment in Major Occupational Groupings for the American Indian and Total U.S. Civilian Labor Force

The report used for the information on employment in major occupational groupings was the 1983 State Summaries of the 1980 U.S. Census of the Population, Characteristics of the Population: General Social and Economic Characteristics. Estimates of male and female civilian labor forces, 16 years and older, were compared between the total U.S. figures and those for the category of American Indian, Eskimo, and Aleut. The six major occupational groupings were used for the analysis.

Persons Employed by Industry for American Indians on Reservations and Total Employed Persons

The data used to identify employment by industry for American Indians on reservations was obtained from the 1980 U.S. Census of the Population, Subject Reports: American Indians, Eskimos, and Aleuts on Identified Reservations and in the Historic Areas of Oklahoma (Excluding Urbanized Areas) (1985). The data used to identify employment by industry for total populations of the 28 targeted states was obtained from the 1983 State and National Summaries of the 1980 U.S. Census of the Population, Characteristics of the Population: General Social and Economic Characteristics. The comparisons of those 16 and older employed by industry for American Indians on reservations to the total populations in the targeted 28 states were based upon the 10 classifications of the Standard Industrial Classification System.

Work Disability Status of Noninstitutional American Indians and the Total Population

The data used to analyze work disabled American Indians compared to the total population were obtained from the 1983 State and National Summaries of the 1980 U.S. Census of the Population, Characteristics of the Population: General Social and Economic Characteristics.

The data used for the comparisons of work disabled among American Indians compared to the total population in the 28 states were based upon number of individuals listed with a work disability by gender.

Dictionary of Occupational Titles Analysis of 26 Closures for American Indians and Total Caseload Clients Served by the Rehabilitation Services Administration

The data used was based upon the R-300 file from RSA for fiscal years 1980-82 based upon an analysis conducted by Morgan and O'Connell (1986). The investigators sampled all American Indian clients and a random two percent sample of the remaining cases for all other races from each of the target years. This sample consisted of 7,627 American Indian client cases and 23,116 cases for all other races who were accepted into caseloads. Cases in which the client was not accepted into the agency's caseload or where the client's race was not known were removed. The first two digits of the Dictionary of Occupational Titles identified in the R-300 file were analyzed for this section for the 26 closures identified in the samples for American Indian and General Caseload clients.

Limitations of Data Source. The Bureau of Indian Affairs unemployment estimates were generated by each local Area Office using whatever information was available for the reservation or tribal entity. Thus, there was not a standardized data collection procedure used across Offices.

Data used from both the Bureau of Labor Statistics and the U.S. Bureau of the Census are based upon sampling procedures in which sample statistics are used to estimate population parameters. Thus, the data is subject to sampling error which is measured for precision by the standard error of a survey estimate. Non-sampling error may be introduced as a result of the many extensive and complex operations used to collect and process census data.

Limitations associated with the Rehabilitation Services Administration data are primarily related to the reliability of those reporting case file information and the accuracy of recording this information to R-300 files. In addition, only Status 26 cases were analyzed which does not provide a picture of the occupational placement patterns of clients who had vocational goals established but were closed in status 28.

Unemployment Rates of American Indians Compared to Total Civilian Labor Force

In this section unemployment rates for 1986 are presented comparing American Indians living on and adjacent to reservations (BIA estimates) with total civilian workers (BLS estimates) by the targeted nine regions. In addition, 1980 U.S. Census unemployment figures are presented for American Indians living on reservations, all American Indians living in the targeted regions and the total regional populations.

Figure 1 shows the 1986 unemployment rates by federal regions. The unemployment rates for American Indians living on and adjacent to reservations range from 29% in Region VI to 51% in Regions II and V. By contrast the unemployment rates for total civilian workers ranged from 5.3% in Region I to 9.8% in Region VI. There was an average difference in unemployment rates of 33.5% in the targeted 28 states.

Figure 1

Unemployment Rates by Federal Regions for American Indians Living On and Adjacent to Reservations and the Total Civilian Labor Force

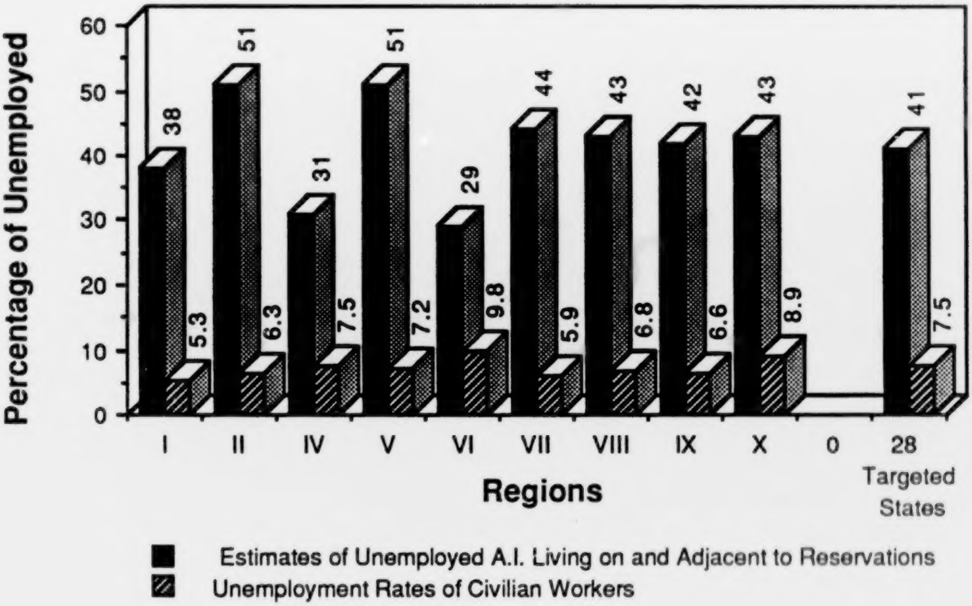
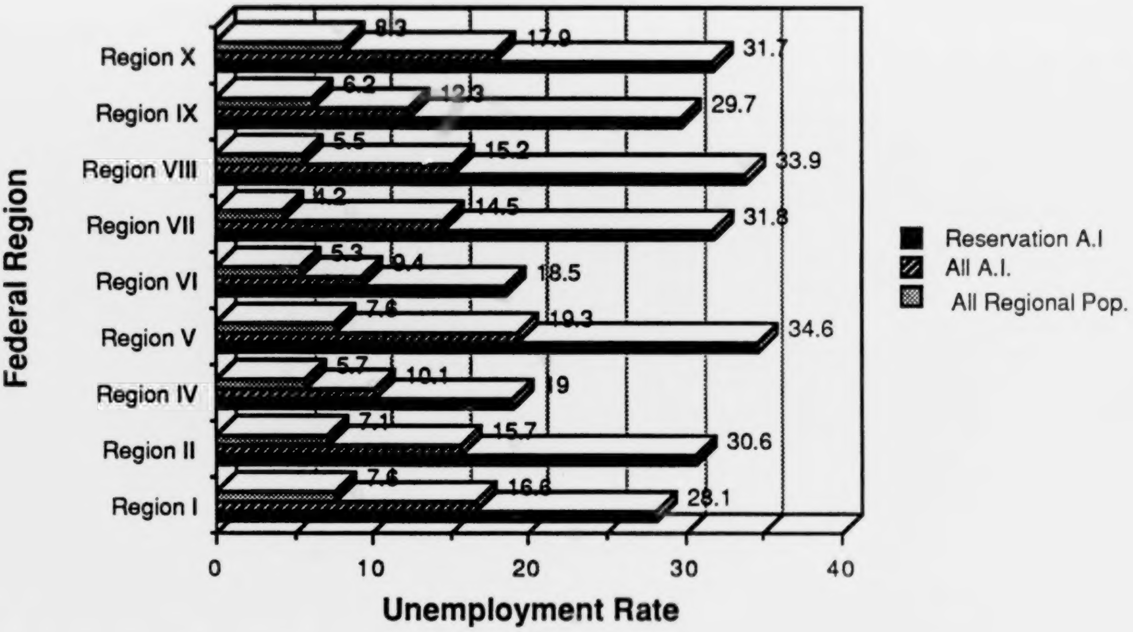


Figure 2 shows the 1980 U.S. Census unemployment rates by federal regions. The unemployment rates for American Indians living on reservations ranged from 18.5% in Region VI to 34.6% in Region V. The unemployment rates for all Indians within regions ranged from 9.4% in Region VI to 19.3% in Region V. The unemployment rates for the total civilian labor force within regions ranged from 4.2% in Region VII to 8.3% in Region X. American Indians living on reservations had an average regional unemployment that was 22.3% higher than the total civilian labor force. The average unemployment rate for American Indians living on reservations was nearly two times that for all American Indians (on and off reservation) by Region for the 28 targeted states.

Figure 2

Unemployment Rates of American Indians and the Total Civilian Labor Force by Federal Region



The following discussion provides unemployment information for the targeted nine RSA Regions. Unemployment information for each of the 28 targeted states can be found in Appendix D-1.

RSA Region I

The state within Region I that was included in this comparison was Maine. Maine has three federal Indian reservations within its boundaries. In 1986, American Indians in Maine experienced an unemployment rate of 38% (BIA, 1987) compared to the total civilian labor force of 5.3% (BLS, 1986-87). Unemployment rates based on the 1980 U.S. Census figures for Maine were 28.1% for American Indians living on reservations, 16.6% for all American Indians, and 7.6% for the total civilian labor force.

RSA Region II

The state within Region II that was included in this comparison was New York. New York has nine federal Indian reservations within its boundaries. In 1986, American Indians in New York experienced an unemployment rate of 51% (BIA, 1987) compared to the total civilian labor force unemployment rate of 6.3% (BLS, 1986-87). Unemployment rates based on the 1980 U.S. Census figures for New York were 30.6% for American Indians living on reservations, 15.7% for all Indians, and 7.1% for the total civilian labor force.

RSA Region IV

The states within Region IV that were included in this comparison were Florida, Mississippi, and North Carolina. Region IV has a total of six federal Indian reservations within its boundaries. In 1986, American Indians in Region IV experienced an unemployment rate of 31% (BIA, 1987) compared to the total civilian labor force of 7.5% (BLS, 1986-87). Unemployment rates based on the 1980 U.S. Census figures for Region IV were 19.0% for American Indians living on reservations, 10.1% for all American Indians, and 5.7% for the total civilian labor force.

RSA Region V

The states within Region V that were included in this comparison were Michigan, Minnesota, and Wisconsin. Region V has a total of 30 federal Indian reservations within its boundaries. In 1986, American Indians in Region V experienced an unemployment rate of 51% (BIA, 1987) compared to the total civilian labor force of 7.2% (BLS, 1986-87). The unemployment figures based on the 1980 U.S. Census were 34.6% for American Indians living on reservations, 19.3% for all American Indians, and 7.6% for the total civilian labor force.

RSA Region VI

The states within Region VI that were included in this comparison were Louisiana, New Mexico, Oklahoma and Texas. Region VI has a total of 62 federally recognized American Indian reservations or tribal entities within its boundaries. In 1986, American Indians in Region VI experienced an unemployment rate of 29% (BIA, 1987) compared to the total civilian labor force of 9.8% (BLS, 1986-87). The unemployment figures based on the 1980 U.S. Census figures were 18.5% for American Indians on reservations, 9.4% for all American Indians, and 5.3% for the total civilian labor force.

RSA Region VII

The states within Region VII that were included in this comparison were Iowa, Kansas, and Nebraska. Region VII has a total of eight federal Indian reservations within its boundaries. In 1986, American Indians in Region VII experienced an unemployment rate of 44% (BIA, 1987) compared to the total civilian labor force of 5.9% (BLS, 1986-87). The unemployment rates based on the 1980 U.S. Census figures were 31.8% for American Indians living on reservations, 14.5% for all American Indians, and 4.2% for the total civilian labor force.

RSA Region VIII

The states within Region VIII that were included in this comparison were Colorado, Montana, North and South Dakota, Utah and Wyoming. Region VIII has a total of 26 federally recognized Indian reservations within its boundaries. In 1986, American Indians in Region VIII had an unemployment rate of 43% (BIA, 1987) compared to the total civilian labor force of 6.8% (BLS, 1986-87). The unemployment rates based on 1980 U.S. Census figures were 33.9% for American Indians living on reservations, 15.2% for all American Indians, and 5.5% for the total civilian labor force.

RSA Region IX

The states within Region IX that were included in this comparison were Arizona, California and Nevada. Region IX has a total of 117 federally recognized Indian reservations within its boundaries. In 1986, American Indians in Region IX experienced an unemployment rate of 42% (BIA, 1987) compared to the total civilian labor force of 6.6% (BLS, 1986-87). The unemployment rates based on the 1980 U.S. Census figures were 29.7% for American Indians living on reservations, 12.3% for all American Indians, and 6.2% for the total civilian labor force.

RSA Region X

The states within Region X that were included in this comparison were Alaska, Idaho, Oregon and Washington. Region X has a total of 33 federally recognized Indian reservations and 197 tribal entities or Native Corporations (Alaska) within its boundaries. In 1986, American Indians/Alaska Natives in Region X had an unemployment rate of 43% (BIA, 1987) compared to the total civilian labor force of 8.9% (BLS, 1986-87). The unemployment rates based on 1980 U.S. Census figures were 31.7% for American Indians on reservations or villages, 17.9% for all American Indians, and 8.3% for the total civlian labor force.

Occupational Participation of American Indians Compared to the Total Civilian Labor Force

According to the 1980 U.S. Census, there were 104,449,817 persons employed in the United States civilian labor force 16 years and over compared to 546,457 American Indians. Comparisons of the percentages employed by gender for the total U.S. civilian labor force and American Indians were approximately the same at 57% males and 43% females.

Figures 3 and 4 show the percentages of American Indians employed in six major occupational groupings by gender compared to the those employed in the total civilian labor force. The participation rates in managerial/professional and technical/sales/administrative support occupations for American Indian males were considerably lower in comparison to the total civilian labor force. A further breakdown of these groupings shows that the total male civilian labor force has higher rates of participation in executive/administrative (1.45 times higher), professional speciality (1.55 times higher) and sales occupations (2 times higher). By contrast, the occupational participation rates in precision production/craft/repair and operator/fabricator/laborer occupations are higher for American Indian males in comparison to the total civilian labor force. The higher participation rates for American Indian males are especially evident in the occupational groupings of handlers/equipment cleaners/helpers/laborers (1.67 times higher) and service occupations, except protective household (1.56 times higher).

Figure 3

Males Employed in Major Occupational Groupings by American Indians Compared with U.S. Civilian Labor Force

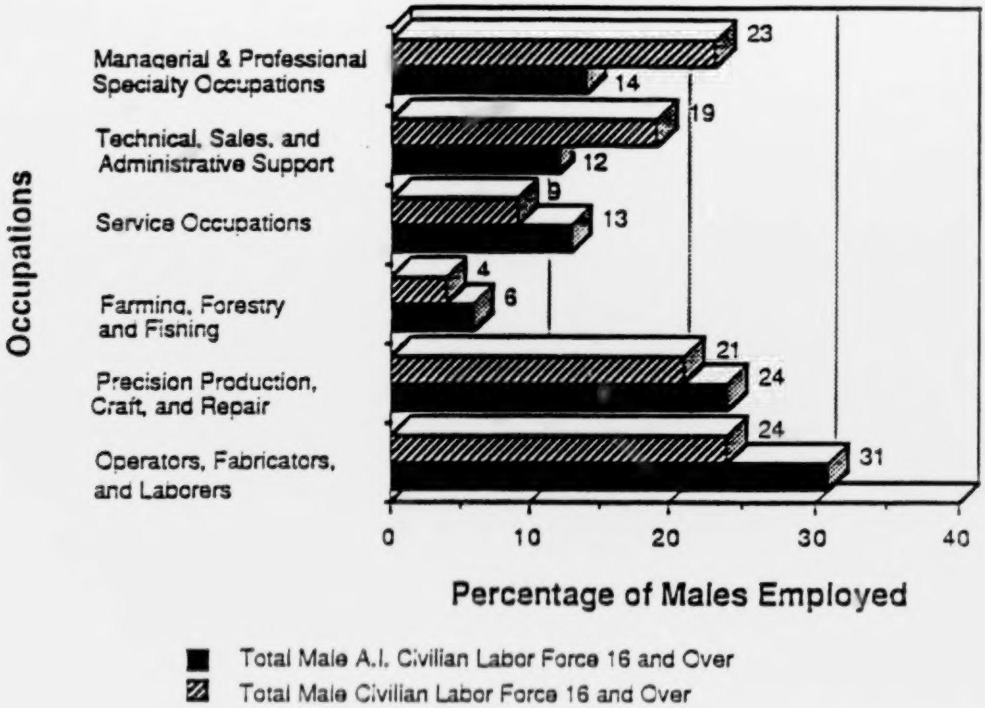
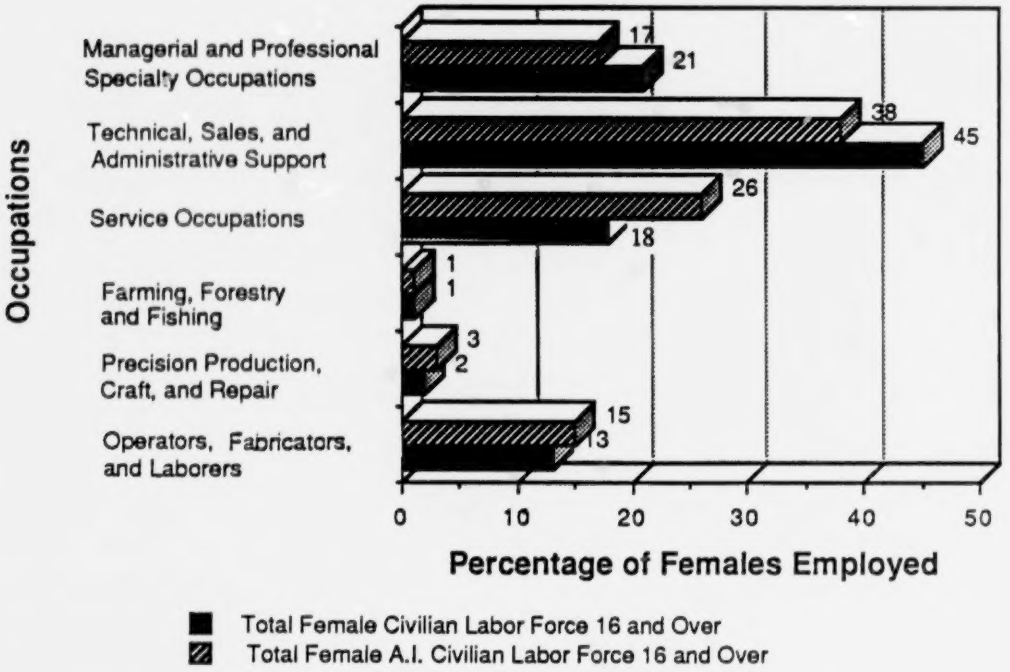


Figure 4

Females Employed in Major Occupational Groupings by American Indians Compared with U.S. Civilian Labor Force



Overall, American Indian females show participation rates in occupational groupings that were more similar to the total female civilian labor force than male comparisons(see Figure 4). The greatest differences were in technical/sales/administrative support (7% lower participation rate) and service occupations (8% higher participation rate). As was the case for males, American Indian females show lower participation rates in sales occupations and higher participation rates in the category of service occupations, except private household and protective services when compared to the total female civilian labor force. The following discussion provides comparisons of the occupational participation rates of American Indians to total population figures by gender, and region in relation to six major occupational groupings.

Region I

The participation rates in operator/fabricator/laborer occupations for American Indian males in Region I (Maine) was very similar to that of the total male civilian labor force, 23% and 22% respectively (refer to Table 1). This is the highest participation rate for American Indian males in any of the occupational groupings included in this comparison. The lowest participation rate for Indian males was in farming/forestry/fishing occupations, which was 6% as compared to 4% for the total male civilian labor force. The highest participation rate of American Indian females was 33% in technical/sales/administrative support occupations. This rate is 6% lower than that for the total female civilian labor force, which was 39%.

More American Indians were employed in service occupations than was the total civilian labor force. The rates were 22% for American Indian males compared to 13% for the total male civilian labor force and 25% for American Indian females compared to 19% for the total female civilian labor force. The total civilian labor force participated at a higher rate than American Indians in managerial/professional specialty occupations, which was 20% compared to 14% respectively.

Table 1

Occupational Participation of the American Indian and Total Civilian Labor Force (16 years and over) for Region I (Maine)

Occupations By Major Groupings	American Indian Civilian Labor Force		Total Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	14.0	14.0	20.0	20.0
Technical, Sales & Administrative Support	22.0	33.0	26.0	39.0
Service	22.0	25.0	13.0	19.0
Farming, Forestry & Fishing	6.0	4.0	4.0	1.0
Precision Production, Craft & Repair	13.0	4.0	15.0	3.0
Operators, Fabricators & Laborers	23.0	20.0	22.0	18.0

Region II

The highest participation rate of 26.6% for American Indian males in Region II (New York) was in technical/sales/administrative support occupations but was nearly 7% lower than the rate for the total male civilian labor force which was 33.5% (refer to Table 2). American Indian females had a rate of 40.3% compared to the total female civilian labor force rate of 48.1%. More American Indians were employed in service occupations and operator/fabricator/labor occupations than the total civilian labor force. In farming/forestry/fishing occupations the participation rates for male and female American Indians and total civilian labor force were very similar. These rates were 1.8% for American Indian male compared to 1.3% for total civilian male labor force and .4% for American Indian female compared to .5% for the total female civilian labor force. The rates in managerial/professional specialty occupations were 16.1% for Indian males compared to 25.7% for total civilian males and 17.9% for Indian females compared to 23.6% for total civilian females

Table 2

Occupational Participation of the American Indian and Total Civilian Labor Force (16 years and over) for Region II (New York)

Occupations By Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Total Civilian Labor Force M %	Total Civilian Labor Force F %
Managerial & Professional Specialty	16.1	17.9	25.7	23.6
Technical, Sales & Administrative Support	26.6	40.3	33.5	48.1
Service	18.8	22.8	13.9	15.9
Farming, Forestry & Fishing	1.8	.4	1.3	.5
Precision Production, Craft & Repair	13.1	3.9	10.4	1.8
Operators, Fabricators & Laborers	23.6	14.7	15.2	10.1

Region IV

American Indian males and females in Region IV participated at a higher rate in operator/fabricator/laborer occupations than the total civilian labor force (refer to Table 3). These rates were 32% for Indian males compared to 19.7% for total civilian males and 34% for Indian females compared to 15.6% for total civilian females in this occupational group. American Indians participated at a slightly higher rate in service occupations and at a significantly lower rate in managerial/professional specialty occupations. The rate for managerial/professional specialty occupations was 12.4% for Indian males compared to 21% for total civilian males and 14.6% for Indian females compared to 20.2% for total civilian females.

Table 3

Occupational Participation of the American Indian and Total Civilian Labor Force (16 years and over) for Region IV

Occupations By Major Groupings	American Indian Civilian Labor Force M %	F %	Total Civilian Labor Force M %	F %
Managerial & Professional Specialty	12.4	14.6	21.0	20.2
Technical, Sales & Administrative Support	16.8	25.4	29.2	42.3
Service	14.3	19.9	13.2	17.9
Farming, Forestry & Fishing	6.1	2.5	3.4	1.3
Precision Production, Craft & Repair	18.4	3.6	13.5	2.7
Operators, Fabricators & Laborers	32.0	34.0	19.7	15.6

Region V

The highest participation rate for American Indian males and females in Region V was in technical/sales/administrative support occupations (refer to Table 4). These rates were 21.7% for Indian males and 35.2% for Indian females compared to 28.9% for total civilian males and 44.5% for total civilian females. The lowest participation rate for both Indian males and females of all occupational groupings in this comparison was in farming/forestry/fishing occupations. The rates for American Indian males was 2.7% and for Indian females was .8% compared to the total civilian male rate of 3.7% and female rate of 1.6%.

Table 4

Occupational Participation of the American Indian and Total Civilian Labor Force (16 years and older) for Region V

Occupations By Major Groupings	American Indian Civilian Labor Force M %	 F %	Total Civilian Labor Force M %	 F %
Managerial & Professional Specialty	13.7	15.4	21.4	19.9
Technical, Sales & Administrative Support	21.7	35.2	28.9	44.5
Service	20.4	28.9	14.0	20.7
Farming, Forestry & Fishing	2.7	.8	3.7	1.6
Precision Production, Craft & Repair	13.4	2.5	12.4	2.0
Operators, Fabricators, & Laborers	28.1	17.2	19.6	11.3

Region VI

The lowest participation rate for American Indians in Region VI was in farming/forestry/fishing occupations (refer to Table 5). The highest rate for American Indians was in technical/sales/administrative support occupations which was also true for the total civilian labor force in Region VI. Indian male participation rates were 5.5% lower and Indian female rates were 3.5% lower than the total civilian labor force in managerial/professional specialty occupations. The rates for American Indians in operator/fabricator/laborer occupations were 5.9% higher for males and 4.0% for females when compared to the total civilian labor force.

Table 5

Occupational Participation of the American Indian and Total Civilian Labor Force (16 years and over) for Region VI

Occupations By Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Total Civilian Labor Force M %	Total Civilian Labor Force F %
Managerial & Professional Specialty	16.1	17.9	21.6	21.4
Technical, Sales & Administrative Support	24.8	40.7	30.8	48.1
Service	16.1	24.7	12.3	18.8
Farming, Forestry & Fishing	3.0	1.0	2.9	.8
Precision, Production, Craft & Repair	16.9	3.2	15.2	2.4
Operators, Fabricators& Laborer	23.1	12.5	17.2	8.5

Region VII

American Indian male and female participation rates in Region VII were higher than the total civilian labor force rates in operators/fabricators/laborers occupations (refer to Table 6). Indian males were 8.9% and females were 6.2% higher than the total civilian labor force. American Indian male and female rates in service occupations were higher than the total civilian labor force; male Indian rates were 17.6% compared to 13.4% for total male rate and the Indian female rate was 24.1% compared to 21.6% for total female. As a group American Indians had a lower rate of 16.9% compared to 20.7% for the total civilian labor force in managerial/professional specialty occupations. The rate for the total male and female civilian labor force was higher than the Indian male and female rate in farming/ forestry/fishing occupations. These rates were 8.6% for total male compared to 2.8% for Indian male and 2.3% for total female and 1.2% for Indian female.

Table 6

Occupational Participation of the American Indian and Total Civilian Labor Force (16 years and over) for Region VII

Occupations By Major Groupings	American Indian Civilian Labor Force		Total Civilian Labor Force	
	M %	F %	M %	F %
Managerial Professional Specialty	16.2	17.7	20.9	20.6
Technical, Sales & Administrative Support	21.2	35.9	27.8	43.5
Service	17.6	24.1	13.4	21.6
Farming, Forestry & Fishing	2.8	1.2	8.6	2.3
Precision, Production, Craft & Repair	16.4	5.5	12.4	2.6
Operators, Fabricators & Laborers	25.8	15.6	16.9	9.4

Region VIII

American Indian participation rates in Region VIII were very similar to the total civilian labor force in farming/forestry/fishing occupations (refer to Table 7). The participation rates were 2.4% higher for Indian males and 2% higher for Indian females than the total civilian labor force in operator/fabricator/laborer occupations. The Indian male participation rate was 5.7% lower the rate for total male and Indian female was 4.7% lower than the rate for total female in managerial/professional specialty occupations. American Indian males and females had a higher rate than total civilian males and females in service occupations.

Table 7

Occupational Participation of the American Indian and Total Civilian Labor Force (16 years and over) for Region VIII

Occupations By Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Total Civilian Labor Force M %	Total Civilian Labor Force F %
Managerial & Professional Specialty	18.0	17.9	23.7	22.6
Technical, Sales & Administrative Support	23.9	36.8	29.5	45.7
Service	23.7	32.5	13.4	20.5
Farming, Forestry Fishing	5.6	.9	5.8	1.7
Precision Production, Craft & Repair	12.5	2.8	13.7	2.4
Operators, Fabrications & Laborers	16.3	9.1	13.9	7.1

Region IX

Indian males had a participation rate in Region IX that was 11.6% higher than the total male civilian rate and Indian females had a rate that was 15.5% higher than the total female civilian rate in service occupations (refer to Table 8). The participation rate for Indian male and females was higher than the total civilian labor force rates for operator/fabricator/laborer occupations. The participation rates were higher for male and female total civilian labor force than Indian male and female for managerial/professional specialty occupations and technical/sales/administrative support occupations. The rates were very similar for Indian male and female and total civilian labor force male and female in precision production/craft/ repair occupations.

Table 8

Occupational Participation of the American Indian and Total Civilian Labor Force (16 years and over) for Region IX

Occupations By Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Total Civilian Labor Force M %	Total Civilian Labor Force F %
Managerial &Professional. Specialty	16.8	20.9	24.9	22.9
Technical, Sales & Administrative Support	20.7	34.6	32.4	47.9
Service	24.7	32.2	13.1	16.7
Farming, Forestry & Fishing	4.3	.8	2.8	1.1
Precision Production, Craft & Repair	13.0	2.3	12.4	2.9
Operators, Fabricators, & Laborers	20.5	9.2	14.4	8.5

Region X

In service occupations, the Indian male participation rate in Region X was 19.9% compared to 13.1% for total civilian males and Indian females was 26.9% compared to 19.5% for total civilian female (refer to Table 9). American Indian males and females had a higher rate for operator, fabricator and labor occupations than did the total male and female civilian labor force. The total civilian male and female rates were higher than the rates for American Indian male and female in managerial professional specialty occupations and in technical/sales/administrative support occupations. The rates of both male and female Indian and total civilain male and female labor force were very similar in farming/forestry/fishing occupations and precision production/craft /repair occupations.

Table 9

Occupational Participation of the American Indian and Total Civilian Labor Force (16 years and over) for Region X

Occupations By Major Groupings	American Indian Civilian Labor Force M %	F %	Total Civilian Labor Force M %	F %
Managerial & Professional Specialty	16.9	18.8	23.7	22.3
Technical, Sales & Administrative Support	25.1	40.7	30.0	46.5
Service	19.9	26.9	13.1	19.5
Farming, Forestry & Fishing	6.1	1.7	4.6	1.6
Precision, Production Craft & Repair	12.2	2.2	13.1	2.3
Operators, Fabricators & Laborers	19.8	9.7	15.5	7.8

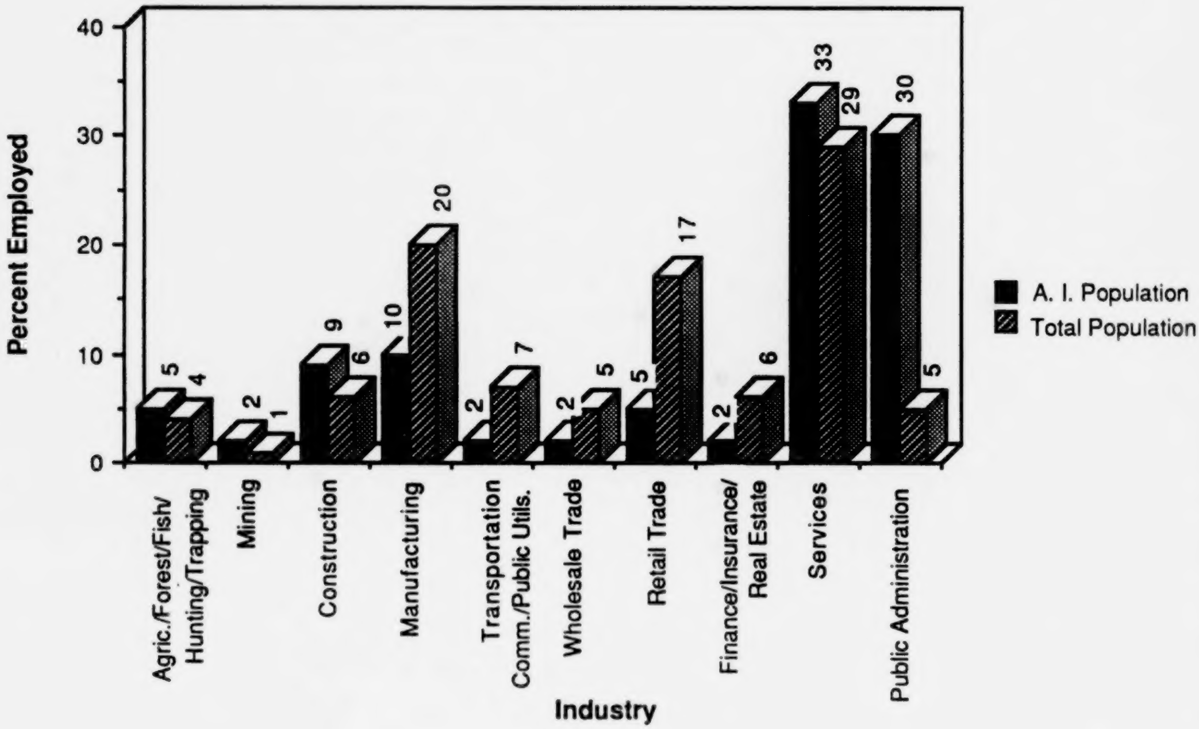
Employment by Industry in RSA Regions for American Indians on Reservations and Total Regionally Employed Persons 16 Years and Older

The following information compares the percentages of American Indians employed in industries on reservations compared to total employed persons in the targeted 28 states. The data is presented according to the Standard Industrial Classification system.

Overall for the 28 targeted states, the highest percentages of persons were employed in the services industry for both American Indians employed on reservations and the total regionally employed persons (refer to Figure 5). The second highest percentage of the total state employed persons were employed in manufacturing occupations while public administration ranked second for American Indians. Proportionately within groupings, there were two times more total employed persons in the 28 states employed in manufacturing occupations, and over three times more persons employed in retail trade occupations than American Indians, while there was six times more American Indians employed in public administration occupations. Higher proportions of American Indians were employed in agriculture/forestry/fishing/hunting/trapping, mining and construction industries. Information related to individuals employed by industry for the targeted nine regions is presented next. Employment in Industry for each of the targeted 28 states can be found in Appendix D-3.

Figure 5

Employment by Industry for American Indians on Reservations and Total State Employed Persons 16 years and older for the Targeted 28 States



Region I

The state within Region I that was included in this comparison was Maine. Maine has three federal Indian reservations within its boundaries. American Indians in Maine were employed at higher rates than the total state employed persons in the agriculture/ forestry/fishing/hunting/trapping industry and the public administration industry (refer to Table 10). These rates were two times the rate of the total state employed in the agriculture/ forestry/fishing/hunting/trapping industry and nine times the rate in public administration. Total state employed persons were employed at two times the rate of American Indians in the construction industry, and four times the rate in the manufacturing industry.

American Indians in Maine were not represented in the mining industry and had a very low rate (under 1.0%) in the trade industry (retail and wholesale). Representation of both groups in the finance/insurance/real estate and services industry was comparable.

Table 10
Employment by Industry in Region I (Maine) for American Indians on Reservations and Total State Employed Persons 16 years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting & Trapping	7.7	3.2
Mining	—	.5
Construction	2.4	5.6
Manufacturing	5.7	27.2
Transportation, Communication & Public Utilities	3.6	5.8
Wholesale Trade	—	3.6
Retail Trade	.4	16.0
Finance, Insurance & Real Estate	4.1	4.4
Services	26.7	28.3
Public Administration	49.4	5.4

Region II

The state within Region II that was included in this comparison was New York. New York has nine federal Indian reservations within it's boundaries. American Indians in New York were not represented in the mining or wholesale trade industries (refer to Table 11). American Indians were employed at over eight times the rate of the total state employed persons in the public administration industry, and three times the rate in the construction industry.

Total state employed persons were represented at a rate three times the rate for American Indians in the transportation/communication/public utilities industries, almost four times the rate in the manufacturing industry, over five times the rate of American Indians in the retail trade industry and over eight times the rate in the finance/insurance/real estate industries. American Indians and total state employed perons were represented at comparable rates in the agriculture/forestry/fishing/hunting/trapping industries and the services industry.

Table 11

Employment by Industry in Region II (New York) for American Indians on Reservations and Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting & Trapping	1.3	1.1
Mining	—	.1
Construction	12.6	3.7
Manufacturing	5.3	21.0
Transportation Communication & Public Utilities	2.7	8.2
Wholesale Trade	—	4.6
Retail Trade	2.7	15.0
Finance, Insurance & Real Estate	1.0	8.3
Services	32.6	33.0
Public Administration	41.8	5.0

Region IV

The states within Region IV that were included in this comparison were Florida, Mississippi, and North Carolina. These state have a combined total of six federal Indian reservations within their boundaries.

American Indians and the total regionally employed persons had very low (under 1.0%) representation in the the mining industry (refer to Table 12). Both were represented at comparable rates in the agricultural and construction industries. American Indians had a rate that was almost five times higher in the public administration industry, and nearly one and one half times the rate in the services industry in comparison to the total regionally employed persons.

Total regionally employed persons had rates that were almost two and one half times the rate of American Indians in the transportation/communication/public utilities industries, and rate five times higher in the retail trade industries, and over five times the rate in finance/insurance/real estate industries.

Table 12

Employment by Industry in Region IV for American Indians on Reservations and Total Regionally Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting & Trapping	2.7	3.6
Mining	.1	.5
Construction	5.5	7.5
Manufacturing	15.9	21.0
Transportation Communication & Public Utilities	2.9	7.2
Wholesale Trade	.1	4.2
Retail Trade	6.6	17.0
Finance, Insurance & Real Estate	1.2	6.0
Services	40.7	28.0
Public Administration	24.3	5.0

Region V

The states within Region V that were included in this comparison were Michigan, Minnesota and Wisconsin. There is a total of 30 federal Indian reservations located in the states within Region V.

American Indians were not represented in the mining industry and had very low (under 1.0%) representation in the wholesale trade industry (refer to Table 13). American Indians and the total regionally employed had comparable rates in the agricultural and related industries. American Indians had rates that were almost 10.5 times the rate of the total regionally employed in the public administration industry and over two times the rate in the construction industry.

The total regionally employed had rates that were over two and one half times the rate of American Indians in the transportation/communication/public utilities, almost two times the rate in the manufacturing industry, and a rate over two times in finance/ insurance/real estate industries. The rate for the total regionally employed in the the service industry was 7.2% higher than the rate for American Indians.

Table 13

Employment by Industry in Region V for American Indians on Reservations and Total Regionally Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting & Trapping	4.3	4.0
Mining	—	.4
Construction	9.8	4.5
Manufacturing	15.0	27.0
Transportation Communication & Public Utilities	2.3	6.0
Wholesale Trade	.4	4.0
Retail Trade	3.7	17.0
Finance, Insurance & Real Estate	1.9	5.1
Services	20.8	28.0
Public Administration	41.8	4.0

Region VI

The states within Region VI that were included in this comparison were Louisiana, New Mexico, Oklahoma and Texas. These states have a combined total of 62 federally recognized Indian reservations or tribal entities within their boundaries.

American Indians had rates that were comparable to the total regionally employed persons in the services and mining industries. American Indians had rates that were 2.3% higher in the contruction and 4.7% higher in the manufacturing industries (refer to Table 14). The rate for American Indians was about one and one half times the rate of the total regionally employed in the agricultural and related industries, and over two and one half times the rate in the public administration industry.

The total regionally employed had rates that were almost two times the rates of American Indians in the transportation/communication/public utilities, and over two and one half times in the finance/insurance/real estate industries. The total regionally employed rate was over two times the rate for American Indians in the retail and wholesale trade industries.

Table 14

Employment by Industry in Region VI for American Indians on Reservations and Total Regionally Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting & Trapping	5.4	3.1
Mining	4.1	3.9
Construction	10.9	8.6
Manufacturing	21.2	16.6
Transportation Communication & Public Utilities	4.3	7.7
Wholesale Trade	1.4	4.9
Retail Trade	8.9	16.6
Finance, Insurance & Real Estate	2.0	5.7
Services	28.4	27.9
Public Administration	13.4	5.0

Region VII

The states within Region VII that were included in this comparison were Iowa, Kansas and Nebraska. These states have a combined total of eight federally recognized Indian reservations within their boundaries.

American Indians had a rate that was almost one and one half times the rate of the total regionally employed in the construction industry and over eight times the rate in the public administration industry (refer to Table 15). American Indians also had a rate that was about one and one half times higher than the rate of the regionally employed in the services industry. American Indians were not represented in the mining and the wholesale trade industries.

The regionally employed had rates that were over two times the rates of American Indians in the agricultural and related industries and finance/insurance/real estate industries.

Table 15

Employment by Industry in Region VII for American Indians on Reservations and the Total Regionally Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting & Trapping	6.6	8.9
Mining	—	.7
Construction	8.5	5.7
Manufacturing	4.6	18.4
Transportation Communication & Public Utilities	.8	7.5
Wholesale Trade	—	4.9
Retail Trade	2.6	16.4
Finance, Insurance & Real Estate	3.4	5.5
Services	40.7	27.9
Public Administration	32.8	4.1

Region VIII

The states within Region VIII that were included in this comparison were Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming. These states in Region VIII have a combined total of 26 federally recognized Indian reservations.

American Indians and the total regionally employed have comparable rates in the agricultural/forestry/fishing/and related industries and the construction industry (refer to Table 16). American Indians had very low (under 1.0%) representation in the mining and wholesale trade industries. American Indians also had a rate that was over 9% higher in the service industry than the rate for the total regionally employed and a rate over four and one half times higher in the public administration industry.

The total regionally employed had a rate that was over two times the rate for American Indians in the manufacturing and finance/insurance/real estate industries. Their rate was almost three times higher in the transportation/communication/public utilities industries, and a rate that was over four times higher in the retail trade industry.

Table 16

Employment by Industry in Region VIII for American Indians on Reservations and the Total Regionally Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting & Trapping	8.9	6.2
Mining	.6	3.5
Construction	7.8	7.5
Manufacturing	5.7	11.9
Transportation Communication & Public Utilities	2.7	7.9
Wholesale Trade	.3	4.5
Retail Trade	3.9	17.3
Finance, Insurance & Real Estate	2.1	5.9
Services	38.0	28.9
Public Administration	30.0	6.4

Region IX

The states within Region IX that were included in this comparison were Arizona, California and Nevada. These states had a combined total of 117 federally recognized Indian reservations or rancherias within their boundaries.

American Indians and the total regionally employed have comparable employment rates in the construction industry and the transportation/communication/public utilities industries (refer to Table 17). American Indians had a rate in that is almost two times the rate for the total regionally employed in the the agriculture/forestry/fishing/hunting/trapping industry and a rate that was four and one half times in the public administration industry. The American Indian rate in the service industry was 8.0% higher than the rate for the total regionally employed.

The total regionally employed had a very low rate (under 1.0%) in the mining industry and a rate that was over two and one half times the rate for American Indians in the manufacturing industry. Their rate was over two and one half times the rate for American Indians in the trade industries (retail and wholesale).

Table 17

Employment by Industry in Region IX for American Indians on Reservations and the Total Regionally Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting & Trapping	5.8	3.0
Mining	5.0	.6
Construction	7.6	6.0
Manufacturing	7.1	19.3
Transportation, Communication & Public Utilities	5.0	7.1
Wholesale Trade	.3	4.3
Retail Trade	5.3	16.6
Finance, Insurance & Real Estate	1.3	7.1
Services	38.7	30.7
Public Administration	23.9	5.3

Region X

The states within Region X that were included in this comparison were Alaska, Idaho, Oregon and Washington. These states have a combined total of 33 federally recognized Indian reservations and 197 tribal entities or Native Corporations.

American Indians and the total regionally employed had comparable rates in agriculture/forestry/fishing/hunting/trapping industry and the service industry (refer to Table 18). American Indians had rates that were over two times the rates of the total regionally employed in the mining and construction industries and a rate that was over three times the rate of the total regionally employed in the public administration industry. American Indians in Region X had a very low rate (under 1.0%) in the transportation/communication/public utilities industries.

The total regionally employed had a rate that was almost two times that of American Indians in the manufacturing industry, over three times greater in the finance/insurance/real estate industry and a rate that was 2.3% higher than American Indians in the trade industries (retail and wholesale).

Table 18

Employment by Industry in Region X for American Indians on Reservations and the Total Regionally Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting & Trapping	6.9	4.7
Mining	1.1	.5
Construction	14.0	6.8
Manufacturing	10.1	18.3
Transportation Communication & Public Utilities	.6	7.7
Wholesale Trade	9.3	4.8
Retail Trade	10.4	17.2
Finance, Insurance & Real Estate	1.9	6.1
Services	28.3	28.4
Public Administration	17.4	5.5

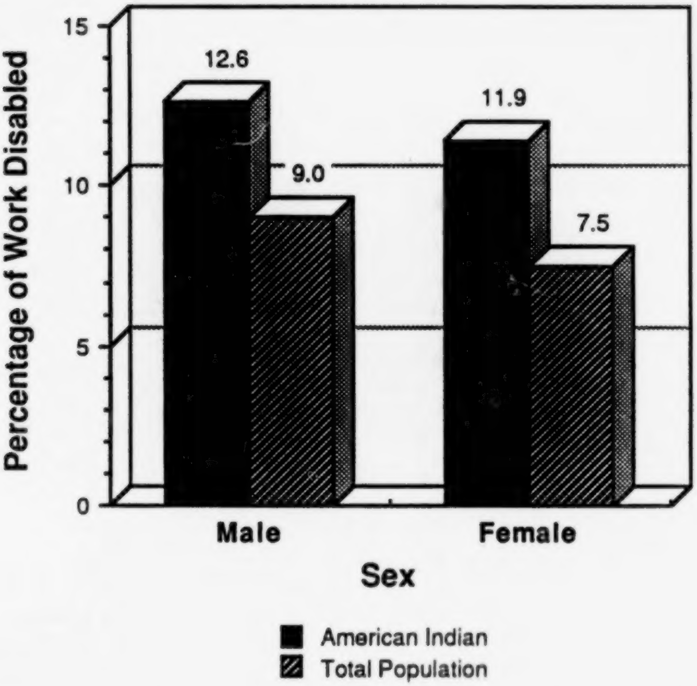
Work Disability Status for Noninstitutional American Indians and Total State Populations (16-64 Years Old) by Sex

Work disability status information is presented in this section for American Indians, compared to total state population figures for the nine targeted regions.

For the 28 targeted states, the percentages of work disabled American Indians was 1 1/2 times greater than the figures for work disabled persons in the total population (refer to Figure 6). The average work disabled rates for American Indians was 12.6% for males and 11.9% for females compared to 9% and 7.5% for males and females in the total populations of the 28 states.

Figure 6

Work Disability Status of Noninstitutional American Indians and Total Population by Sex for the Targeted 28 States



While the majority of work disabled persons in both the American Indian and total population groups lived in urban areas, more work disabled American Indians lived in rural areas. Fifty-two percent of American Indian males and 54% of females lived in urban areas of the 28 states compared to 65% and 68% of the total population.

Figures 7 and 8 show the percentages of work disabled American Indians and total populations by region for males and females. The highest rate of work disabled American Indian males (17.2%) was in Maine which was the only state targeted in Region I. The lowest rate of work disabled American Indian males (7.7%) was in Region VIII which also had the lowest rate for the total population in comparison to other regions. The lowest work disability rates for American Indian females (8.6%) and total population females

(6.3%) were also in Region VIII. The highest work disability rate for American Indian females (13.8%) was in New York which was the only state targeted in Region II.

Figure 7

Work Disability Status of Noninstitutional American Indian Males and Total Population by Federal Region

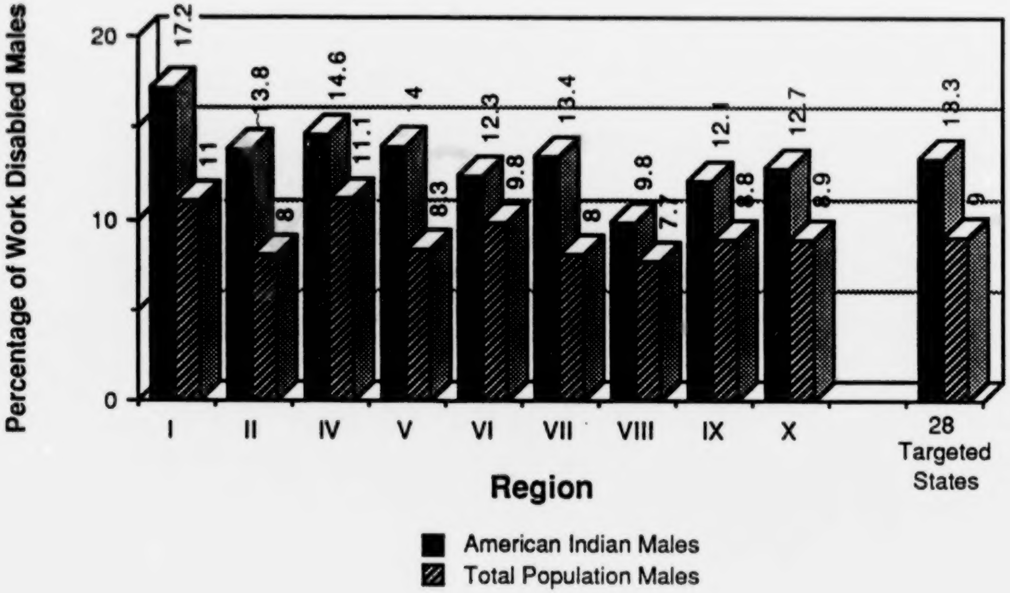
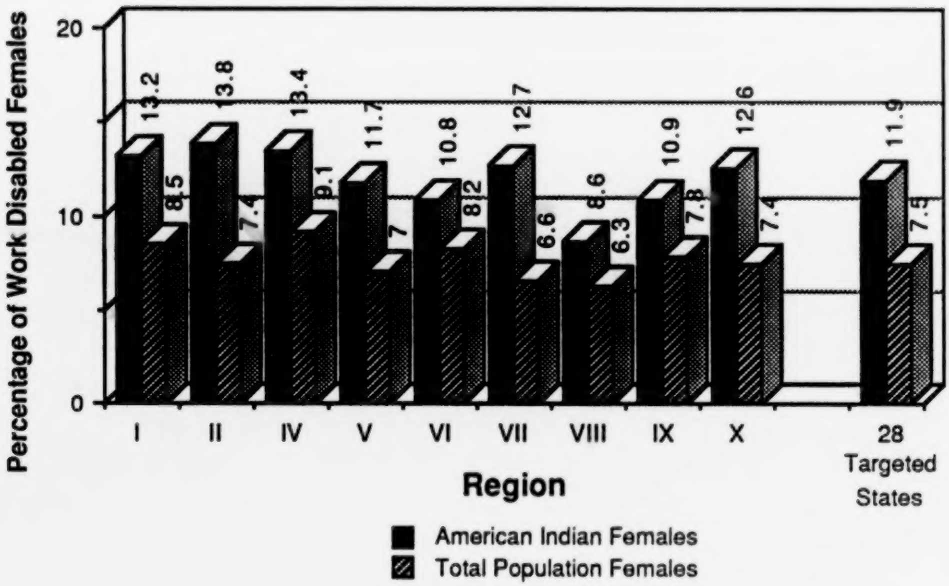


Figure 8

Work Disability Status of Noninstitutional American Indian Females and Total Population by Federal Region



The following information compares the work disability status of American Indians and the total population by sex for the nine targeted regions. Work disability status by state can be found in Appendix D-4.

RSA Region I

The 1980 U.S. Census showed that the percentages of work disabled for American Indians in Region I were 17.2% for males and 13.2% for females. Of the work disabled males 36% lived in urban areas and 64% lived in rural areas. Thirty-one percent of the work disabled females lived in urban areas compared to 69% in rural areas.

By comparison the percentages for the total regional population in Region I were 11% for males and 8.5% for females. A higher percentage of male and female work disabled in the total regional population lived in urban areas, males (44%) and females (48%).

RSA Region II

In Region II, 13.8% of both male and female American Indians were work disabled. Of the work disabled males 69% lived in urban areas and 31% lived in rural areas. Of the work disabled females 76% lived in urban areas and 24% lived in rural areas.

By comparison, 8% of males and 7.4% of females of the total regional population were work disabled in Region II. Of these, 84% of males and 87% of females lived in urban areas.

RSA Region IV

In Region IV, 14.6% of male and 13.4% of female American Indians were work disabled. Of the work disabled males 50% lived in urban areas and 50% lived in rural areas. Of the work disabled females, 47% lived in urban areas and 53% lived in rural areas.

By comparison, 11.1% of male and 9.1% of the females of the total regional population were work disabled. Of the work disabled males 55% lived in urban areas and 45% lived in rural areas. Of the work disabled females 57% lived in urban areas and 43% lived in rural areas.

RSA Region V

In Region V, 14% of male and 11.7% of female American Indians were work disabled. Of the work disabled males 56% lived in urban areas and 44% lived in rural areas. Of the work disabled females 62% lived in urban areas and 38% lived in rural areas.

By comparison, 8.3% of male and 7% of females of the total regional population were work disabled. Of the work disabled males 65% lived in urban areas and 35% lived in rural areas. Of the work disabled females 70% lived in urban areas and 30% lived in rural areas.

RSA Region VI

In Region VI, 12.3% of male and 10.8% of female American Indians were work disabled. Of the work disabled American Indians 50% of male and 50% of females lived in urban areas.

By comparison, 9.8% of male and 8.2% of females of the total regional population were work disabled. Of these 68% of males and 59% of females of the work disabled lived in urban areas.

RSA Region VII

In Region VII, 13.4% of male and 12.7% of female American Indians were work disabled. Of these 64% of male and 74% of females lived in urban areas.

By comparison, 8% of male and 6.6% of females in the total regional population were work disabled. Of these 62% of males and 67% of females lived in urban areas.

RSA Region VIII

In Region VIII, 9.8% of male and 8.6% of female American Indians were work disabled. Of these 44% of male and 46% of female lived in urban areas.

By comparison, 7.7% of male and 6.3% of females in the total regional population were work disabled. Of these 62% of male and 65% of females lived in urban areas.

RSA Region IX

In Region IX, 12.1% of male and 10.9% of female American Indians were work disabled. Of these 61% of males and 58% of females lived in urban areas.

By comparison, 8.8% of male and 7.8% of females in the total regional population were work disabled. Of these 85% of male and 86% of females lived in urban areas.

RSA Region X

In region X, 12.7% of male and 12.6% of female American Indians were work disabled. Of these 50% of males and 52% of females lived in urban areas.

By comparison, 8.9% of male and 7.4% of females in the total regional population were work disabled. Of these 61% of males and 66% of females lived in urban areas.

Dictionary of Occupational Title Analysis of 26 Closures for American Indian and Total Caseload Clients Served by the Rehabilitation Services Administration.

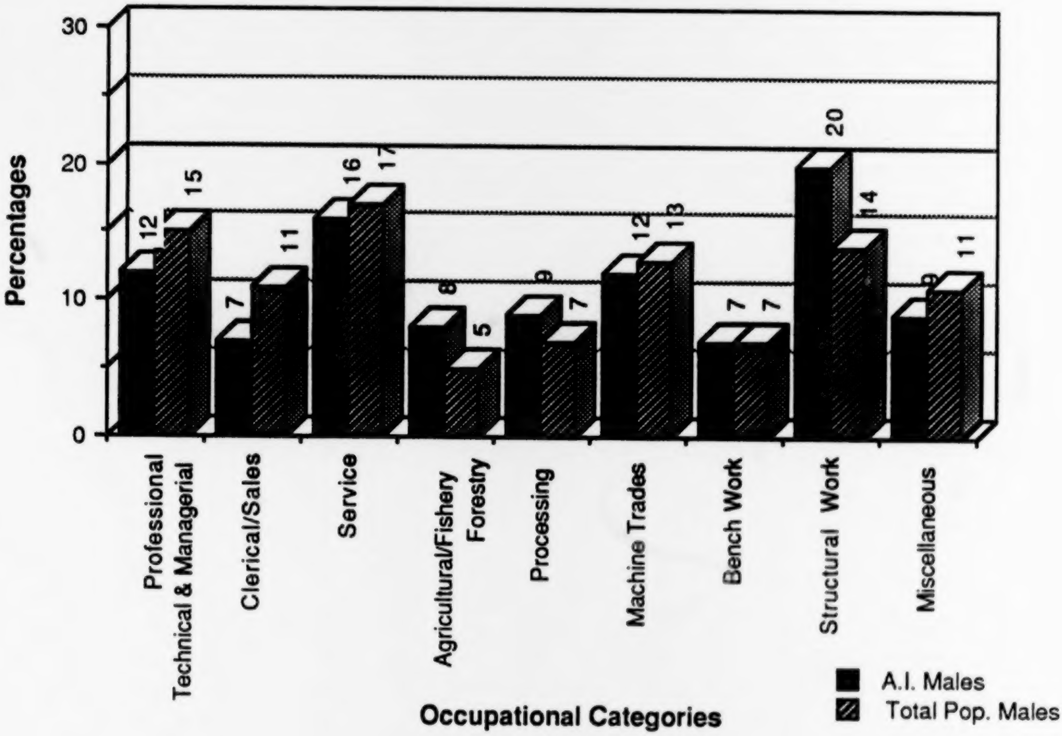
The following results are based upon data pertaining to successfully closed cases (status 26) reported by states to RSA during 1980, 1981 and 1982.

A total of 3,664 American Indian clients and 7,086 clients from the total caseload sample were closed successfully in status 26 among the targeted 28 states. The first digit of the Dictionary of Occupational Titles (DOT) was used to classify the occupational placements of those by gender from both groups who were closed in status 26.

Overall, the occupational placements differed most between American Indian and total caseload male clients in the groupings of clerical/sales and structural work occupations (refer to Figure 9). Total caseload male clients were placed 1.57 times more in clerical/ sales occupations and American Indian clients were placed 1.43 times more in structural occupations. Total caseload males were placed in professional/technical/managerial occupations three percent more often than American Indian males and American Indian males were placed in agricultural/fishery/forestry/related occupations three percent more often than the total caseload males.

Figure 9

DOT Classification for RSA 26 Closures by American Indian and Total Caseload Males

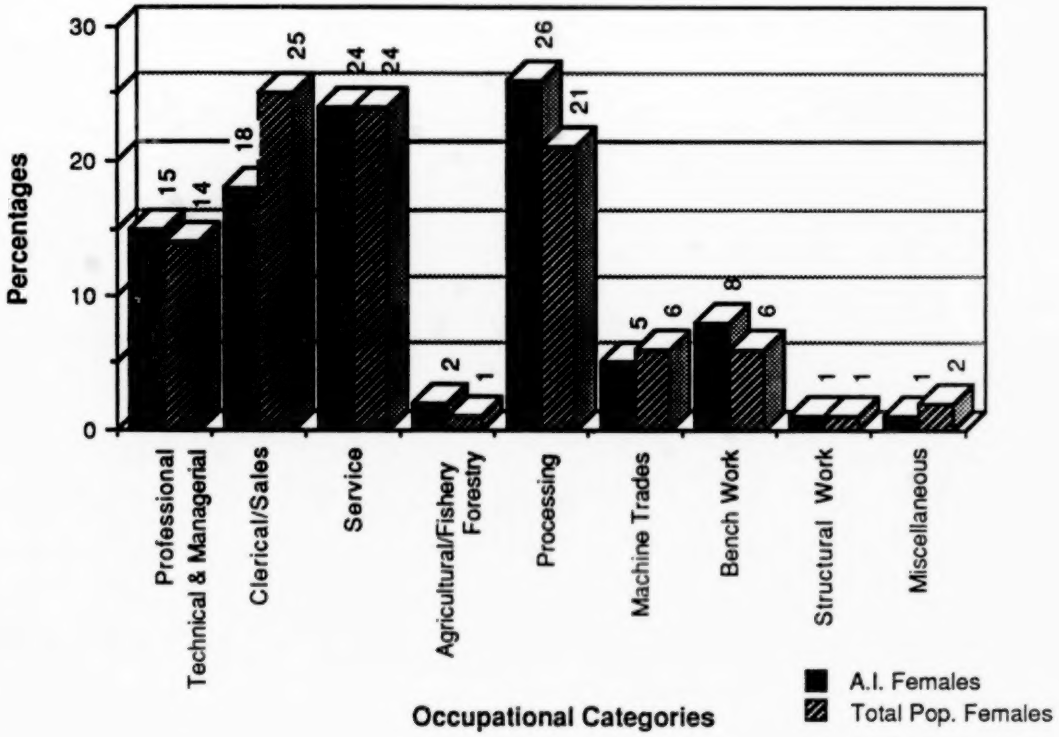


For female clients, the greatest differences in occupational placements were in the groupings of clerical/sales and processing occupations (refer to Figure 10). Total caseload female clients were placed in clerical/sales occupations seven percent more often than American Indian females and American Indian female clients were placed in processing occupations five percent more often than total caseload females.

Figure 10

DOT Classification for RSA 26 Closures by American Indian and Total Caseload Females

The following information compares the vocational placements of American Indians and total caseload clients by sex for each region. Because of the low placements in Maine and New York, they have been combined for analysis.



Regions I and II

The occupational placements differed most between American Indian and total caseload male clients in four groupings (refer to Table 19). Total caseload male clients were placed two and two thirds times higher in professional/technical/managerial occupations and over two times higher in clerical/sales occupations than American Indian male clients. American Indian male clients were placed over three times higher in processing occupations and over two times higher in structural work occupations than total caseload clients.

For females, the greatest differences were in two areas. Total caseload female clients were placed eight percent more often in processing occupations and American Indian female clients were placed seven percent more often in machine trades occupations.

Table 19

DOT Classification for RSA 26 Closures in Regions I and II by American Indians, Total Caseload and Sex

DOT Classification	Males American Indian %	Males Total Caseload %	Females American Indian %	Females Total Caseload %
Professional, Technical, and Managerial Occupations	6	16	13	11
Clerical and Sales Occupations	6	13	22	19
Service Occupations	12	15	13	14
Agricultural, Fishery, Forestry and Related Occupations	3	1	0	0
Processing Occupations	25	8	13	21
Machine Trades Occupations	18	29	35	28
Bench Work Occupations	6	6	4	6
Structural Work Occupations	15	6	0	0
Miscellaneous Occupations	9	6	0	1

Region IV

The occupational placements differed the most between American Indian and total caseload male clients in four areas (refer to Table 20). Nearly three times as many males in the total caseload were placed in clerical/sales occupations and nearly two times as many were placed in service occupations when compared to American Indian male clients. Twice as many American Indian male clients were placed in agricultural/ fishery/forestry/related occupations and they had 10% more placements in structural work occupations.

For females, there were five areas that differed the most. There was eight percent more placements for total caseload female clients in clerical/sales occupations and 11% more in service occupations. American Indian female clients were placed two times as high in bench work occupations and 9% more often in processing occupations in comparison to the total caseload female clients. They were also placed three times higher in agriculture/fishery/forestry/occupations.

Table 20

DOT Classification for RSA 26 Closures in Regions IV by American Indians, Total Caseload and Sex

	Males		Females	
DOT Classification	American Indian %	Total Caseload %	American Indian %	Total Caseload %
Professional, Technical, and Managerial Occupations	4	9	8	9
Clerical and Sales Occupations	4	11	12	20
Service Occupations	9	17	18	29
Agricultural, Fishery, Forestry and Related Occupations	16	8	7	2
Processing Occupations	6	5	33	24
Machine Trades Occupations	8	10	4	4
Bench Work Occupations	10	6	16	8
Structural Work Occupations	29	19	1	1
Miscellaneous Occupations	14	15	1	3

Region V

The types of occupational placements for American Indian and total caseload males are quite similar in Region V (refer to Table 21). The groupings with the most difference were clerical/sales occupations in which the total caseload clients were placed four percent more often and machine trades in which American Indian clients were placed three percent more often.

The occupational placements for females differed most in three areas. American Indian female clients were placed 5% more often in professional/technical/managerial occupations and twice as high in machine trades occupations. Total caseload females were placed in processing occupations four percent more often.

Table 21

DOT Classification for RSA 26 Closures in Region V by American Indians, Total Caseload and Sex

	Males		Females	
DOT Classification	American Indian %	Total Caseload %	American Indian %	Total Caseload %
Professional, Technical, and Managerial Occupations	18	18	22	17
Clerical and Sales Occupations	5	9	23	26
Service Occupations	16	18	22	23
Agricultural, Fishery, Forestry and Related Occupations	5	4	0	1
Processing Occupations	10	8	12	16
Machine Trades Occupations	15	12	10	5
Bench Work Occupations	8	9	8	7
Structural Work Occupations	13	13	1	1
Miscellaneous Occupations	10	9	2	4

Region VI

The occupational placements for American Indian and total caseload male clients in Region VI differed the most in four areas (refer to Table 22). Total caseload male clients were placed in clerical/sales and miscellaneous occupations at five percent more often, while American Indian males had a two times higher rate in processing occupations and were placed four percent more often in structural work occupations.

For females, the differences were primarily in two areas. Total caseload female clients were placed in clerical/sales occupations nine percent more often while American Indian female clients were placed in processing occupations 14% more often.

Table 22

DOT Classification for RSA 26 Closures in Region VI by American Indians, Total Caseload and Sex

DOT Classification	Males American Indian %	 Total Caseload %	Females American Indian %	 Total Caseload %
Professional, Technical, and Managerial Occupations	13	15	12	14
Clerical and Sales Occupations	7	12	16	25
Service Occupations	17	18	28	29
Agricultural, Fishery, Forestry and Related Occupations	6	4	1	1
Processing Occupations	14	7	37	23
Machine Trades Occupations	10	10	1	2
Bench Work Occupations	5	5	3	3
Structural Work Occupations	21	17	1	1
Miscellaneous Occupations	7	12	1	2

Region VII

The occupational placements for American Indian and total caseload male clients differed the most in three areas (refer to Table 23). Total caseload male clients were placed in clerical/sales occupations at a rate over five times higher and a rate of three times higher in bench work occupations then American Indian male clients. American Indian male clients were placed at a rate nearly three times higher in structural work occupations.

The greatest differences for female clients were in two areas: American Indian female clients were placed in clerical/sales occupations eight percent more often while total caseload female clients were placed in machine trades occupations six percent more often.

Table 23

DOT Classification for RSA 26 Closures in Region VII by American Indians, Total Caseload and Sex

	Males		Females	
DOT Classification	American Indian %	Total Caseload %	American Indian %	Total Caseload %
Professional, Technical, and Managerial Occupations	19	16	16	18
Clerical and Sales Occupations	2	11	21	13
Service Occupations	20	18	27	29
Agricultural, Fishery, Forestry and Related Occupations	2	4	3	1
Processing Occupations	6	8	27	24
Machine Trades Occupations	10	13	0	6
Bench Work Occupations	2	7	3	5
Structural Work Occupations	27	10	3	1
Miscellaneous Occupations	12	13	0	3

Region VIII

The occupational placements for American Indian and total caseload males in Region VIII differed the most in two areas (refer to Table 24). Total caseload male clients were placed in service occupations five percent more often while American Indian male clients were placed in structural work occupations 11% more often.

For females, occupational placements differed most in three areas. General population female clients were placed in clerical/sales occupations nearly twice the rate. American Indian female clients were placed six percent more often in service occupations and a rate nearly three times higher in bench work occupations.

Table 24

DOT Classification for RSA 26 Closures in Region VIII by American Indians, Total Caseload and Sex

DOT Classification	Males American Indian %	 Total Caseload %	Females American Indian %	 Total Caseload %
Professional, Technical, and Managerial Occupations	15	17	19	18
Clerical and Sales Occupations	6	9	15	28
Service Occupations	16	21	30	24
Agricultural, Fishery, Forestry and Related Occupations	6	4	0	0
Processing Occupations	5	8	21	19
Machine Trades Occupations	11	13	3	6
Bench Work Occupations	8	6	8	3
Structural Work Occupations	25	14	2	1
Miscellaneous Occupations	8	8	2	1

Region IX

The occupational placements for American Indian and total caseload males in Region IX differed the most in four areas (refer to Table 25). Total caseload male clients were placed more often in professional/technical/managerial occupations (six percent higher) and four percent higher in bench work occupations. American Indian male clients had a three times higher rate in processing occupations and were placed at a six percent higher rate in machine trades occupations when compared to total caseload male clients.

American Indian and total caseload female clients had more differences in occupational placements than did males. Total caseload female clients were placed more often in clerical/sales occupations (13% higher) and five percent higher in processing occupations. American Indian female clients were placed in professional/technical/managerial occupations seven percent more often and machine trades occupations nine percent more often than total caseload female clients.

Table 25

DOT Classification for RSA 26 Closures in Region IX by American Indians, Total Caseload and Sex

DOT Classification	Males American Indian %	 Total Caseload %	Females American Indian %	 Total Caseload %
Professional, Technical, and Managerial Occupations	13	19	27	20
Clerical and Sales Occupations	12	15	26	38
Service Occupations	20	17	19	15
Agricultural, Fishery, Forestry and Related Occupations	6	3	0	2
Processing Occupations	6	2	7	12
Machine Trades Occupations	15	9	11	2
Bench Work Occupations	6	10	9	6
Structural Work Occupations	14	16	1	1
Miscellaneous Occupations	8	9	0	4

Region X

The occupational placements for American Indian and total caseload male clients in Region X differed most in two areas (refer to Table 26). Total caseload males were placed in professional/technical/managerial occupations seven percent more often while American Indian male clients were placed in agricultural/fishery/forestry/related occupations at a rate over two times higher.

For females, the greatest differences were in three areas. Total caseload female clients were placed in clerical/sales occupations nine percent more often. American Indian female clients were placed in service occupations eight percent more often and in bench work occupations over two times higher than total caseload female clients.

Table 26

DOT Classification for RSA 26 Closures in Region X by American Indians, Total Caseload and Sex

DOT Classification	Males American Indian %	Males Total Caseload %	Females American Indian %	Females Total Caseload %
Professional, Technical, and Managerial Occupations	11	18	15	18
Clerical and Sales Occupations	9	9	22	31
Service Occupations	19	16	26	18
Agricultural, Fishery, Forestry and Related Occupations	10	4	3	1
Processing Occupations	7	6	18	21
Machine Trades Occupations	15	16	6	5
Bench Work Occupations	7	8	7	3
Structural Work Occupations	14	12	1	0
Miscellaneous Occupations	8	11	2	3

Summary

The purpose of this section was to analyze labor market participation factors associated with American Indian employment in general contrasted to total civilian labor force employment. Information was also presented that compared factors associated with the labor market participation of American Indians with disabilities to individuals from the general population who are disabled. Secondary sources of information were used for the analyses which were obtained from the: (a) U.S. Bureau of the Census, (b) U.S. Bureau of Labor Statistics, (c) U.S. Bureau of Indian Affairs, and (d) Rehabilitation Services Administration of the U.S. Department of Education. The labor market participation factors which were analyzed in this report are: (a) unemployment rates, (b) participation in occupations, (c) employment by industry, (d) work disability status, and (e) vocational placement of RSA cases closed in status 26.

Unemployment Rates

Despite the differences in unemployment rates reported by 1980 U.S. Census and 1987 BIA estimates, it is clearly evident that the unemployment rates of American Indians, especially those living on or adjacent to reservations, are pervasively higher than unemployment experienced in the total civilian labor force in the 28 states. Whether the unemployment figures for American Indians living on or adjacent to reservations are under-estimates or whether the average differences in unemployment are 5.47 times higher (BIA and BLS estimates) or 4.49 times higher (1980 U.S. Census), the fact remains that there are consistently higher employment rates among American Indians living on or adjacent to reservations compared to the total civilian labor force.

The unemployment rates for American Indians living on or adjacent to reservations were 1.97 times higher than for American Indians living both on and off reservations. In addition, American Indians living both on and off reservations had a 3.38 times higher rate of unemployment than those for the total civilian labor force.

The unemployment rates acorss six of the nine targeted regions were reasonably consistent. Regions I, IV, and VI had the lowest unemployment rates for American Indians living on or adjacent to reservations but they were still an average of 4.34 (BIA and BLS estimates) and 3.53 (1980 U.S. Census) times higher than for the total civilian labor force.

Participation in Occupations

The 1980 U.S. Census showed that American Indian males and females participate at different rates in several major occupational groupings when compared to the total U.S. Civilian Labor Force. The total male and female civilian labor force are employed at higher rates in managerial/professional specialty and technical/sales/administrative support occupations when compared to American Indian males and females. These differences are higher for males than females. The total male civilian labor force had a 1.45 times higher rate in executive/administrative, a 1.55 times higher rate in professional specialty and a 2 times higher rate in sales occupations when compared to American Indian males in the labor force.

American Indian males and females had higher rates of participation in service and operator/fabricator/laborer occupations. The differences were higher for females in service occupations in which 8% more American Indian females were employed when compared to the total female civilian labor force. Seven percent more American Indian males were employed in operator/fabricator/laborer occupations when compared to the total male civilian labor force.

The lower participation rates in managerial/professional specialty and technical/sales/administrative occupations and the higher rates in service and operator/fabricator/laborer occupations for American Indians compared to the total civilian labor force were reasonably consistent across regions.

Employment by Industry

American Indians living on or adjacent to reservations were employed in industries at different rates when compared to total state employed persons 16 years and older. The percentages employed in "goods producing" industries (agriculture/forestry/fishing/hunting/trapping, mining/energy, construction and manufacturing) and the "service producing" industries (transportation/communications/public utilities, wholesale trade, retail trade, finance/insurance/real estate, services and public administration) are proportionately similar for American Indians on reservations compared to the total population. But, a comparison of specific industries shows substantial differences.

Employment by industry for the total employed persons in the 28 states showed a 2 times higher rate in manufacturing, 3.5 times higher rate in transportation/communication/public utilities, 2.5 times higher rate in wholesale trade, 3.4 times higher rate in retail trade, and a 3 times higher rate in finance/insurance/real estate industries when compared to American Indians employed on reservations. By contrast, American Indians on reservations wer employed slightly higher in agriculture/forestry/ fishing/hunting/trapping, mining and services industries. They also had a 1.5 times higher rate of employment in the construction industry and a 6 times higher rate in the public administration industry.

The employment in industry patterns were reasonably consistent across regions when compared to employment by industry in the total 28 states. American Indians on reservations had higher rates in the public administration industry and comparable rates to the total regionally employed in the services industry. The total regionally employed persons had higher rates in manufacturing, finance/insurance/real estate, retail and wholesale industries.

Work Disability Status

Work disabilities among American Indians were more prevalent than for the total population in the targeted 28 states. The work disability rate for American Indian males was 1.4 times higher and it was 1.6 times higher for American Indian females when compared to the total population by gender. While the majority of both American Indians and the total population with work disabilities lived in urban areas, higher percentages of work disabled American Indian males (48%) and females (46%) lived in rural areas when compared to total population males (35%) and females (32%).

The highest percentage of work disabled American Indian males was in Region I (Maine) and Region II (New York) for females. The highest percentages of work disabled males and females in the total population were in Region IV. The lowest percentages of both American Indian and total population males and females were in Region VIII. In Regions I, IV, and VIII more work disabled American Indians lived in rural areas than in urban areas.

Vocational Placements of RSA Cases Closed in Status 26

Overall, American Indian clients were placed into occupational categories at somewhat consistent rates when compared to the total caseload clients in the 28 states. American Indian clients were placed in several occupational areas similiar, but not as differential, to patterns identified in the occupational participation analysis. Both American Indian male and female clients were placed at lower rates than the total caseload in clerical and sales occupations. American Indian male clients were placed less often than the total caseload males in professional, technical and managerial occupations aand more often in structural work occupations. These patterns also parallel the types of industries American Indians are employed in on reservations. Lower proportions of American Indians living on reservations compared to the total caseload figures are employed in industries that most closely relate to sales occupations (wholesale trade, retail trade and finance, insurance and real estate). Higher proporations of American Indians living on reservations compared to total population figures were employed in industry that most closely relates to structural work occupations (construction).

Overall, American Indian female clients were placed into occupational groupings more similar to total caseload females than comparisons of males in the two groupings. American Indian females were placed in professional/technical/managerial, processing and bench work occupations at slightly higher rates than total caseload females.

SECTION V

THE NATURE AND EXTENT OF COOPERATIVE EFFORTS BY STATE VOCATIONAL REHABILITATION PROGRAMS FOR INDIAN PEOPLE WHO ARE DISABLED

THE NATURE AND EXTENT OF COOPERATIVE EFFORTS BY STATE VOCATIONAL REHABILITATION PROGRAMS FOR INDIAN PEOPLE WHO ARE DISABLED

The purpose of this section is to describe the nature and extent of cooperative efforts by State VR and Blind Service agencies in 27 states with significant American Indian populations in relationship to the improvement of vocational rehabilitation services to American Indians who are disabled. Three respondent groups were identified for interviewing: (1) State VR and Blind Service administrators; (2) State VR district managers; and (3) Indian VR project directors. The interviews consisted of questions related to several key issues that would identify the special problems and needs of American Indians with disabilities, as well as articulate the nature and extent of cooperative efforts between state VR and Blind Service agencies and Indian tribal groups.

First, the policies, strategies, and activities of the State agencies that have been implemented, or are being planned for implementation, were addressed. The questions related to this issue investigated agency planning activities in response to the new legislation, designated staff responsibility, efforts to increase communication with tribes, and special initiatives targeting improved VR services for American Indians.

Second, the problems, or barriers, to improving vocational rehabilitation services to American Indians who are disabled were addressed. The barriers most frequently cited in the relevant literature are: (1) cultural, (2) linguistic, (3) geographic/residency patterns, (4) socioeconomic conditions, (5) governmental relations, and (6) type of disabling conditions.

Third, the solutions to overcoming the barriers to improving vocational rehabilitation services to American Indians who are disabled were investigated. Fourth, the survey included questions related to the State VR agencies' response to Part A, Section 101 (20) of the 1986 Reauthorization of the Rehabilitation Act, requiring, as appropriate, that the state actively consult with Indian tribes, tribal organizations, and Native Hawaiian organizations in the development of the State Plan.

Sources of Data

Three respondent groups were identified for interviewing: (1) State VR and Blind Service Administrators; (2) District VR Managers, and (3) Project Directors of three federally funded Indian VR projects. Respondents to the surveys were selected from 27 states with significant American Indian populations (including Eskimo and Aleut). States where the Indian population is 10,000 or more, or at least 1% of the state population were identified (Table 1).

Survey questionnaires were developed for data collection from the three respondent groups:

1. State VR and Blind Service administrators and/or their designees were interviewed to elicit information about the current state policies and activities related to VR services to American Indians with disabilities. A total of 38 State administrators were interviewed. Questions were designed to address and examine formal policies, current activities, special efforts, perceived barriers to serving Indian people, creative strategies for implementing the policies, and communication and coordination mechanisms.

2. From the 20 states with the highest Indian populations, 13 district VR managers in districts serving reservations were selected and interviewed. A survey questionnaire was

designed to assess formal and informal activities occurring at the local level for the purpose of improving services to American Indians, including outreach efforts, training and in-service for VR staff serving Indian clients, and the relationships with tribes living within the district service area.

3. A third questionnaire was developed and administered to project directors of three currently funded Indian VR projects, at the Rocky Boy, Montana, Fort Hall, Idaho and Navajo reservations. The central issues that were addressed included the nature of vocational rehabilitation service delivery changes since project initiation, relationship and interaction with the State VR system, perceived barriers to service delivery to reservation based Indians and solution strategies for addressing barriers.

Table 1

American Indian Population and Residency Characteristics

State	Total Indian Population[1]	% of Total State Population	Number of Recognized Tribes, Rancherias or Native Alaskan Entities[2]	Total % of Indian Population[3]	
				Urban	Rural
AK	64,047	15.99	197	14%	86%
AZ	152,857	5.62	21	25%	75%
CA	201,311	.85	102	83%	17%
CO	18,059	.63	2		
FL	19,316	.20	2		
ID	10,521	1.11	5		
IL	16,271	.14	0		
KS	15,371	.65	4		
LA	12,064	.29	3		
MI	40,038	.43	6	66%	34%
MO	12,319	.25	0		
MN	35,026	.86	6	56%	44%
MT	37,270	4.74	11	13%	87%
NC	64,635	1.1	1	15%	85%
ND	20,157	3.09	5		
NM	104,777	8.06	23	21%	79%
NV	13,304	1.66	17		
NY	38,732	.22	7	80%	20%
OH	12,240	.11	0		
OK	169,464	5.69	35	45%	55%
OR	27,309	1.04	7	45%	55%
SD	45,101	6.53	9	11%	89%
TX	40,074	.28	3	80%	20%
UT	19,256	1.32	7		
WA	60,771	1.47	25	59%	41%
WI	29,497	.63	11	48%	52%
WY	7,125	1.51	2		

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[1] All population figures are based on 1980 U.S. Bureau of the Census data.

[2] Figures vary for exact number of federally recognized tribes. Numbers presented are as accurate as could be obtained from current BIA figures.

[3] Available for states with 25,000 or more American Indians.

The questionnaires were developed in consultation with members of the Northern Arizona University Native American Research and Training Center (NARTC) Advisory Committee, representing RSA Regional Office IX, State VR administrators, Indian VR project directors, and NARTC staff. The questionnaire was developed with an open-ended response format to allow each administrator, district manager, or Indian VR project director to describe in detail particular policies, strategies, and activities in the context of his/her agency's program and goals. After the questionnaires were sent for review and feedback from the NARTC Advisory Committee, modifications were made which improved the clarity and specificity of each question. It was pilot tested with an RSA staff person, a former State VR administrator, for question clarity and required time for administration. Refer to Appendix E-1 for copies of the three questionnaires used in this study. The questionnaire to State administrators was then approved by the Council of State Administrators of Vocational Rehabilitation (CSAVR). On May 22, 1987, an introductory letter and copy of the questionnaire were sent to State VR and Blind Services administrators in the 27 targeted states, for a total of 38 individuals. The telephone surveys were conducted between June 1 and July 6, 1987.

Results

Data will be presented in aggregate form with response frequencies reported where available, and summarized, open-ended response information is provided for each question. Since the major portion of the information generated from the interviews were categorical judgments, a categorical coding scheme was developed prior to the interviews, in consultation with the NARTC Advisory Committee, to facilitate a more systematic interpretation and presentation of the response data. For each question an array of possible responses was generated for coding during the interview. Responses which were not covered by the categorical scheme were documented and added to the categorical scheme. This simplified data collection and facilitated clustering of similar responses.

The total number of responses to each question varies across the questions. Respondents were allowed to provide more than one response to any question. Thus on some questions there are a greater number of responses than respondents. On a few questions not all respondents provided responses. Three of the 27 states with significant Indian populations have no Indian reservations, Ohio, Missouri, and Illinois. Three of the 38 respondents could not respond to questions related to serving reservation-based Indians.

Differences between the states in questionnaire responses were statistically analyzed to determine if policies, strategies, and cooperative effort are statistically related to the following population and demographic characteristics: (1) total Indian population; (2) percent of state population; (3) number of recognized Indian tribes; and (4) urban or rural residence of the majority of the states with an Indian population.

State Administrator Questionnaire

In the following presentation survey questions that were developed for State VR and Blind Service agency administrators are discussed and analyzed. The questions are provided, followed by response frequencies and stated relative importance of responses (when available). The major content of the response data was qualitative. The responses reflect the judgements, perceptions, and experience of the State administrators in regard to their State policies and activities and are summarized in narrative discussions.

Question 1 *The 1978 amendments to the Rehabilitation Act specifically addressed the need to improve or increase VR services to Native Americans. The 1986 amendments strengthened the language related to Indians in several sections (12) throughout the Act. Are you aware of the language in the specific sections related to VR services for American Indians?*

Response Type	*No. Responding*
Yes	*37*
No	*1*
Total	*38*

Thirty-seven of 38 respondents indicated awareness and familiarity with the specific legislative language related to VR services for American Indians. Variation exists across states in the respondents' level of understanding and activities that have been conducted to increase their understanding. Fifteen State agencies reported having conducted a thorough analysis of the amendments, and ten State agencies were in the process of legislative analysis at the time of the interview. Twenty respondents specifically mentioned the need for legislative interpretation and regulations. Almost half the respondents expressed particular concern regarding the interpretation of the State's current and continuing role and responsibility for tribal VR projects funded under Section 130.

Question 2 *Does your agency have any existing policies/initiatives specifically targeted to meet the needs of Indians?*

Response Type	*No. Responding*
Yes	*15*
No	*23*
Total	*38*

Fifteen respondents reported that their agency has or has had initiatives developed to improve VR service delivery to American Indians. Twenty-three respondents reported that no special initiatives or policies were developed which targeted the Indian population. Respondents presented a variety of qualifying statements in conjunction with their "yes" or "no" response. All persons responding "no" indicated that Indians, like all state residents, were included in current policies and initiatives, and that VR services are for all eligible individuals with disabilities, including all ethnic groups.

Existing policies and initiatives cited by the fifteen "yes" respondents ranged considerably in focus and character. Eight State agencies have or are developing cooperative agreements with tribes to define their needs, agree on the type of services and service delivery approaches, and receive assistance from the tribes in identifying potential clients.

Of the 15 "yes" respondents, the strategies for implementing special initiatives within their states included a needs assessment, definition of goals and objectives with specific activities resulting in action plans, and development of linkages between State VR and tribes which facilitate communication and understanding. State VR-tribal relationships are established with the tribal council, health workers, tribal education committee, or other specifically identified tribal entity. The quality of the relationship between the State VR agency and tribes is reported by most respondents to be the major determinant of the success of VR in improving services to American Indians.

Fifteen respondents who cited specific initiatives and policies, as well as four others, indicated that counselors visit clients on the reservations on a regular basis. Cooperative relationships include joint use of on-reservation agency facilities, and hiring of liaison individuals (who may be bilingual and may be affiliated with other services on the reservation) to interface between the VR personnel and the tribe and tribal council. Only a few respondents indicated cooperative relationships with other service providers on the reservation, such as Indian Health Service (IHS), Bureau of Indian affairs (BIA), and Federal, State, or tribal social service agencies. Five respondents indicated that special state initiatives for American Indians were warranted as part of affirmative action efforts, since the Indian population was underserved.

Question 3 *When you implement a new initiative, what approaches/strategies/people do you typically rely on?*

Question 3.1 *What unique approaches may be necessary in improving VR services for Indians?*

Respondents were asked to outline the usual activities and procedures that are followed when new initiatives are implemented. The general strategies reported are summarized on the following page:

1. A task force is named to study the issue.
2. A needs assessment is conducted.
3. Priorities and objectives are defined.
4. An advisory council reviews the initiative.
5. A study of approaches developed by other states is conducted.
6. A delineation of personnel requirements, staff training needs, and funding sources is developed.
7. Preliminary implementation of initiative occurs on a trial basis.
8. In response to feedback, modifications are made in the identified strategies.

Most states utilize a similar process to plan and implement new projects. Respondents were asked to consider if a unique approach might be necessary in implementing initiatives to improve services to American Indians.

Response Type	*No. Responding*
Yes	*24*
No	*12*
No Response	*2*
Total	*38*

Of the 24 "yes" respondents, twenty indicated a need for a more aggressive outreach, with efforts made to "take VR to the reservation". Fifteen respondents cited a need for extra agency efforts if services to American Indians are to be increased in their state. Extra efforts include educational programs with tribal leaders and the general community on the reservation to increase awareness about VR, in conjunction with efforts to increase cultural awareness and sensitivity of the VR personnel working with Indian clients. Five respondents expressed an interest in assisting tribes applying for Section 130 funding.

Site-specific efforts were cited as most successful, where efforts begin with establishing linkages between State VR and resource individuals on the reservation, such as tribal leaders, educators, or health workers. Twenty-five respondents report the establishment of communication channels as a critical step in creating a working relationship between the agency and the tribe. The development of a relationship with one key tribal person has occurred in all cases where agencies report successful relations with tribes. Success is perceived to be linked to tribal support of VR.

Linkages with other service providing agencies were mentioned by several respondents as important for increasing outreach and referrals, but only 10 respondents reported cooperative relationships with IHS or BIA. Many agencies expressed the need to increase efforts to communicate and cooperate with IHS and BIA.

The need to promote economic and job development on or near the reservation was cited by all respondents in states with reservations (n=24). The respondents reported that the establishment of suitable employment opportunities for clients was essential to improving VR services to American Indians. States perceive the need for cooperative efforts across State and Federal agencies to create economic opportunities, but look to tribal councils for direction.

Twelve respondents (33%) reported that there was no need for a unique approach to improving rehabilitation services to American Indians.

Question 4. *Has a staff person been designated as responsible for addressing legislative changes related to American Indians?*

Response Type	*No. Responding*
Yes	*16*
No	*21*
Total	*37*

Twenty-one respondents reported that no staff person has been designated. Sixteen respondents indicated that a full or part-time responsibility for addressing service needs of American Indians had been designated. For respondents reporting that no such position had been established, a second level question was asked, "Is a position planned?". Eight of the "no"responses indicated that the field staff have been alerted to the legislative changes, but no central coordinating responsibility has been designated. Two respondents suggested that a need existed for a specialist or liaison position, but one had not yet been created.

Question 5. *In establishing initiatives for your State, how would you rank improving/expanding VR services to Indians in your service priorities?*

Response Type	*No. Responding*
High	*7*
Medium	*15*
Low	*16*
Total	*38*

Less than one-fifth of the respondents indicated that improving VR services to American Indians is a high priority. An equal proportion of the respondents, approximately 42%, ranked improving/expanding VR services to American Indians as a medium or low priority. Two-thirds of the respondents who ranked the issue a medium priority (n=10) indicated that their agency was currently making a concerted effort to serve Indian clients, and other programs are targeted as higher priorities, for example, the supported employment program.

Question 6 *The new amendments require that the State VR "actively consult" with tribal organizations on the State Plan. What do you plan to do in response to the requirement?*

Response Characteristics:	*No. Responding*
Will invite tribes to public hearing and/or ask for written input to State Plan	*20*
Will meet with tribes	*10*
Will meet with inter-tribal council representing the tribes in State	*8*
Will meet with urban Indian council	*4*
Will meet with State Bureau of Indian Affairs	*3*
Total	*35*

Thirty-five respondents cited actions their agency would take in response to this amendment. Ten indicated two strategies, for example, invite all tribes to participate in public hearings and meet with the inter-tribal council, an organization representing all recognized tribes in the state. Four respondents indicated that meeting with urban Indian councils was planned; these states have high urban Indian populations. Three respondents indicated that the State Bureau of Indian Affairs was the representative agency for the joint tribes. Ten respondents indicated plans were made to meet individually with tribal representatives to solicit input into the development of the State Plan. Eight respondents representing states with numerous tribes plan to meet with the inter-tribal council. Twenty respondents report that Indian tribes, like all VR consumer groups, will or have been invited to attend and testify at the public hearings where the State Plan is being discussed.

Question 6.3 *Who on your staff will consult with tribes or tribal organizations?*

Response Type	*No. Responding*
Counselors	*15*
State Director or Designee	*10*
No one specified	*10*
Total	*35*

Fifteen respondents reported that the VR counselor is the designated staff person who will consult with tribes. The respondents indicated that the reason for designating the VR counselor is because of the need for the VR-tribal relationship to be established at the local level, that the counselor as provider of services on the reservation should make the first contacts and establish communication at the service delivery level. State relationships would then follow in a formal fashion.

Ten respondents reported that the State-tribal relationship should be initiated at the State level, with the consultation process identified as a formal procedure. These respondents identified the intent of the legislation as a requirement to conduct a State-tribe meeting, and that the counselors' relationships and acceptance by the tribes would be facilitated by this approach.

Ten respondents indicated that tribes would be invited to participate in the development of the State Plan through the public hearing process.

Question 6.4 How will you identify which tribal representative to consult with?

Response Type	*No. Responding*
Identify tribal leaders through inter-tribal council	18
Contact tribes directly	12
No Response	5
Total	35

Eighteen respondents reported that they would identify tribal leadership through the inter-tribal councils. Twelve respondents indicated that their agency will contact each tribe directly to identify appropriate contact persons.

The wording "as appropriate" was noted by three respondents in states without reservations, citing it was not relevant for their states. Four other respondents suggested that it is up to the State to decide if consultation will occur, and what form it will take. Five states with large numbers of Indian tribes indicated that consultation with the inter-tribal council is the only alternative because there are too many individual tribal groups to access. Those states have established relationships with the inter-tribal councils, and, have been assured by the council members that the council is representative of the Indian tribes' needs and interests.

Question 7 Which do you think is the best strategy to improving/increasing VR services to reservation-based Indians?

Response Type	*No. Responding*
BuildingV R services for Indians within existing State structures	23
Helping tribes secure funding for creating tribally administered programs	3
Combination of above--tribal programs operating in conjunction with existing services	12
Total	35

Thirty-five respondents identified strategies which reflected their agency's position. Three respondents cited two strategies. Few respondents identified independent tribally administered programs as the best strategy to improving VR services for several reasons. Most respondents are waiting for an interpretation and regulations for Section 130 funding. The respondents frequently stated questions regarding the formal relationship of Indian projects to the State VR program. Except where a tribe is large, most respondents expressed concern that independent tribally administered projects would create a separate and inferior system of VR services on the reservation. Five respondents were investigating the use of Section 130 funding for cooperative State-tribe efforts. Eight respondents selecting the alternative to build VR services for Indians within existing State structures stated that active involvement of Indian tribes should be solicited to target their needs and increase outreach efforts to Indian people, but that services should be administered within the existing state VR system.

Question 8 *It is the legislative intent that "the State shall provide VR services to handicapped American Indians residing in the State to the same extent as the State provides such services to other significant segments of the population of individuals with handicaps residing in the State." Section 101(20). What problems or barriers do you foresee in accomplishing this?*

Several barriers to VR services to Indian people were mentioned by most respondents. Cultural differences were cited as barriers unless the agencies make a concerted effort to understand the cultural differences and "contextualize" their outreach and education efforts, as well as the overall program approach, especially on reservations. Transportation was reported a major barrier because of the isolated location of most reservations and the economic status of Indians with disabilities. Distance from all VR services, including evaluation, training, counseling, and medical restoration, was identified as a barrier for reservation Indians.

A lack of employment opportunities on or near the reservation was cited as a barrier by the respondents from states with reservations; thus employment placement on or near the reservation is difficult. Respondents reported that some villages and communities have no economic activity aside from subsistence living, and therefore, such conditions preclude vocational rehabilitation, as it is most traditionally defined, from taking place in these communities. Relocation, which most respondents say is required due to lack of training and employment opportunities on reservations, is not perceived as a viable option for most Indians, and has attendant difficulties, such as loss of family and cultural support systems and increased cost of living.

Half of the respondents reported that many American Indians do not relate to "the VR system", adding that relationships to the IHS and BIA are often characterized by dependency, while VR requires self initiative and commitment to long term goals. The historical dependence on federal programs by Indian people was mentioned as a disincentive to participate in vocational rehabilitation.

Language barriers were mentioned by respondents in states where English is a second language for Indians. Half of these respondents cited that bilingual resource personnel would be necessary to better serve these clients. They indicated that limited English proficiency also limits placement opportunities.

Substance abuse was mentioned by all respondents as both a barrier to serving Indians and as an obstacle to successful rehabilitation. Although legally defined as a debilitating condition, some respondents suggested that alcoholism itself is not sufficient criteria for eligibility.

Question 8.1 Are there different barriers for urban versus reservation Indians?

Some of the barriers affecting urban and/or reservation Indians were discussed under Question #8, but will be mentioned again in the context of determining specific strategies for improving VR services to American Indians, on and off the reservation.

Urban Indians were reported by the majority of respondents as more integrated into the majority culture. English is spoken by most urban Indians, thus language difference is not perceived by the respondents as a barrier, although it was recognized that English may still be a second language. Respondents reported that Indians residing in cities are usually more aware of the array of social services and the process required to obtain services. They reported that urban Indians have become more acculturated than reservation Indians to a bureaucratic, time conscious culture, and that more training and job opportunities exist in urban centers. VR outreach efforts were reported to be similar across ethnic groups, but urban Indian centers are often visited by counselors seeking assistance with client referrals.

On the other hand, respondents identified some barriers specific to urban Indians. Urban Indians often do not have family or cultural support systems and have no identified central agency with whom to communicate. This is especially difficult for the Indian who recently moved to the city. Financial needs are greater in the city. Respondents cited the frequent occurrence of program dropouts among urban Indian clients.

The respondents indicated that reservation Indians experience barriers to VR service primarily because of cultural differences, geographic isolation, and lack of employment opportunities on the reservation. However, the respondents reported that the strong family and cultural ties can operate as a support system during rehabilitation and that shared circumstances with other rural consumers, such as difficulty in client identification, transportation, inconsistency and infrequency of counselor contact act as barriers.

Question 8.2 Have you any suggestions about how to remove barriers or obstacles in the implementation of the new legislation?

Seven respondents reported that no specific barriers existed to providing VR services to Indians in parity with other populations. Thirty respondents cited barriers but only twenty made suggestions for practices and/or policies which might reduce or remove barriers. Rather than report frequencies, suggestions will be listed in a ranked order of response frequency and degree of reported importance.

1. Promotion of job development and creation of employment opportunities for disabled people on or near the reservation.

2. Sensitivity to cultural differences, demonstrated by increased in-service training for VR staff serving Indian clients, hiring of Indian staff in districts which include reservations, more aggressive and culturally sensitive outreach and education on the reservation.

3. Identification of tribal resources including tribal leaders, health services, and education committees, for establishing relationships which assist in outreach and referral.

4. Demonstrated commitment to improved communication with tribes and tribal organizations.

5. Establishment of State-tribal relationships at both the central State administration and counselor levels. A model for State-tribe relationships may be that of the tribe-IHS or tribe-BIA, or may be a new form, more equal and more collaborative. Success of counselors' relationships depend on visibility, cultural sensitivity, consistency, commitment, and persistence.

6. Establishment of cooperative relationships at both administrative and service delivery levels with IHS, BIA, public schools, social services, and other service providers to identify funding sources, reduce redundancy, and facilitate coordinated service implementation.

7. Whenever possible, take services to the reservation: intake, evaluation, counseling, medical restoration, training, and placement. Use Indian paraprofessionals to assist in referral, intake, and orientation.

8. Share successful strategies and approaches across states. RSA can facilitate this. Include American Indian input and involvement in technical assistance.

9. More aggressive outreach programs targeting identification and participation of Indian clients.

10. Identify personnel for program specialist and liaison responsibilities, with a mandate to increase awareness and identification of special needs and problems of Indians with disabilities and to establish communication channels between VR agencies and tribes.

11. Use of peer counseling and successful models of rehabilitation to increase motivation, understanding, and identification with the VR process among Indian clients.

12. Increasing the priority of this issue at the State level. A clear direction from the agency to increase services is required. State administrators need to personally commit to elevating the issue to a high level of concern.

13. Identification and targeting of school age disabled Indians for transitioning. The respondents believe there are better chances for successful VR participation with this population.

14. Facilitate and encourage submission of Section 130 funding proposals to develop additional reservation-based VR projects. Consideration of cooperative project development may be beneficial where Section 130 funding provides services which increase visibility and VR services on reservations, as well as tribal commitment to VR.

15. Increased efforts are necessary to generate accurate needs assessment and identification of barriers to services for reservation Indians.

16. Reassessment of VR in relation to cultural differences is required. The values and process of VR should be reconsidered in the context of reservation culture. Lock-step process may be difficult to relate to. Criteria and definition of success may need to be enlarged. Modification of service provision strategies may be required to adequately serve disabled Indians residing on reservations.

Question 9 *Does the legislation provide opportunities for you as state director in addressing the VR needs of Indians with disabilities?*

Response Type	*No. Responding*
Yes	26
No	7
No Response	5
Total	38

Most respondents perceive and reported benefits from the new legislation. Sixteen respondents reported that increased visibility of the Indian population with disabilities and awareness of barriers to providing VR service to Indians stimulated by the new legislation will contribute to improvements in the efforts and results of agency actions. Seven respondents cited the availability of Section 130 funding as an opportunity to develop culturally sensitive and culturally relevant VR services on the reservations, although 10 respondents expressed concern about the quality of Indian VR projects. Nine respondents cited that improved State-tribe relationships may follow from increased interaction.

Question 10 *What do you see as the role of the Regional RSA office in implementing the "Indian Initiatives?"*

Response Characteristics	*No. Responding*
1. Monitoring	9
2. Technical assistance *a) specific to Indian culture* *b) interpretation of the new legislation* *c) assistance in working with tribes receiving Section 130 funding*	19
3. Other *a) training materials* *b) mediation* *c) sharing information across states of successful approaches and efforts* *d) hold a national conference on VR and the disabled Indian* *e) assistance in coordinating with IHS and BIA*	24
Total	32

Most respondents indicated that they looked to RSA for direction, interpretation, and technical assistance in the planning and implementation of agency policy related to the "Indian Initiatives". Most respondents (N=32) cited more than one perceived role for RSA.

Question 11. What information or assistance would be useful to your agency in responding to the new legislation?

Responses Characteristics	*No. Responding*
1. Successful approaches used in other states for developing cooperative relationships and/or improving VR services to American Indians	14
2. Technical assistance *a) in-service training to increase cultural awareness of VR staff* *b) interpretation of legislation*	24
3. Demographic and cultural information about tribes residing in State	6
4. Assistance on needs assessment	3
Total	30

Thirty respondents indicated that some information and technical assistance would be useful during the planning period as they develop an agency response to the legislative changes. Half of the respondents reported that information about successful approaches used elsewhere which contributed to improved relations and communication with tribes and/or improved service delivery to reservation Indians would be most helpful. Technical assistance is reported as needed by three-fourths of the respondents, especially legislative interpretation and regulations. Most respondents indicated more than one response.

District Manager Questionnaire

Questionnaires were developed for administration to district managers in districts serving reservation clients[1]. State administrators were asked to identify district managers with experience and familiarity with the relevant issues concerning VR service delivery to American Indians with disabilities. From the 20 states with the highest American Indian population a sample of 15 states[2] was selected. Thirteen interviews[3] were conducted. Three district managers in districts which include Indian VR projects were included in the sample.

The questionnaire was designed to examine current efforts to serve reservation clients, staff responsibility, relationship with the tribes and other social service providers on the reservation, cooperative efforts, training and in-service, and experience in the district in identifying and serving American Indian clients.

Question 1 *Does your district office currently serve Indian clients?*

Response Type	*No. Responding*
Yes	*13*
No	*0*

Question 2 *Do you have staff person(s) specifically responsible for serving reservation Indian clients? Urban Indian clients?*

Question 2.1 *Criteria for selection/identification of this personnel?*

Question 2.2 *Do you have any Native American staff?*

Question 2.3 *How often does staff person(s) visit Indian clients on the reservation?*

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[1] Except Oklahoma, where a district with a significant Indian population was identified, since Oklahoma has no reservation.

[2] CA, OK, AZ, MN NC, AK WA, TX, MI, MN, WI, OR, UT, CO, ID.

[3] In two cases the district manager conducted the interview with the assistance of the counselor serving the reservation. In two other cases, counselors serving reservation clients were designated to represent the district manager.

Eleven district managers reported that counselors do serve Indian clients on reservations, ten on an itinerant basis, one on a full-time basis. In the ten districts, it was reported that one or two counselors are responsible for serving the reservations and visit the reservation one or two times monthly. Cooperative arrangements for use of facilities on the reservation are made with the public schools, IHS, mental health, or the tribal education committee. Three district managers reported that half or more of their Indian clients live off the reservation and were served in State VR offices. Most counselors work at more than one location on the reservation, half visit clients in the homes or at other agreed upon settings. Ten respondents reported that the criteria for the selection of counselors who serve reservation-based Indians was previous experience working on a reservation. Three counselors speak the native language of the tribe. Six respondents cited having American Indians on staff. Three are counselors serving reservations.

Question 3 *Are the costs of rehabilitation different when serving disabled Indian clients?*

Twelve respondents reported that the costs associated with serving Indian clients are actually lower because of similar benefits paid for by other agencies, such as IHS, BIA, tribal educational grants, U. S. Department of Education, VA, and some private funding sources. Funding sources are "piggy-backed", so programs are developed which comprise numerous funding sources. Seven respondents indicated that rehabilitation usually takes longer, and that drop out rates and unsuccessful closure rates are higher. Six respondents cited that the high rate of alcoholism of Indian clients contributed to the higher failure rate. Three respondents reported that Indian clients have more expectations of support, including maintenance, transportation, and financial assistance, than other clients. Varying degrees of interagency interaction were reported, although interagency funding coordination was reported by all respondents. Actual interagency communication and cooperation was reported by nine respondents, identifying IHS, BIA, tribal councils, Job Training Partnership Act Program (JTPA), Veterans Administration, and U. S. Department of Education.

Question 4 *Given that high unemployment of the Indian population is a major barrier to vocational rehabilitation, what existing mechanisms in the State VR system could be used to overcome the barriers to successful rehabilitation of Indian clients?*

The purpose of this question was to address the high unemployment rate on or near reservations reported across all three groups of respondents as a major barrier to increasing the success of VR services to reservation clients. Active efforts were reported by all respondents to promote economic activities on or near the reservations, and to encourage preferential hiring for Indian clients. It was reported that new businesses are encouraged to seek JTPA funding or to take advantage of targeted jobs tax credits to hire VR clients. The respondents indicated that the isolated location of most reservations is not conducive to the success of manufacturing operations; and when manufacturing operations were begun in the last seven years on four reservations, all failed.

Three respondents cited efforts to make VR respond more realistically to the local economy. Seasonal jobs are targeted in one area, where clients work in service industries during the tourist seasons. Self employment on the reservation was cited by five respondents as one option, specifically in crafts production. Cooperatives developed to organize craftworkers on the reservation are operating on five reservations.

Tribal economic development is reported by all district managers as an ideal solution, because it would create employment opportunity and enable the client to remain on the reservation. Two respondents indicated that State VR training facilities were built adjacent to the reservation. In one district a building trades training program with JTPA funding is coordinating with a federal housing grant to build homes on the reservation. This kind of coordination is seen as essential by all district managers in the face of limited competitive employment opportunity.

The problem is considered by all respondents to be a long term, high priority issue. Relocation to areas where training and jobs exist was reported by three respondents to be the only realistic short term response to limited employment opportunity on the reservation. These respondents indicated that the same economic conditions affected non-Indian clients in their districts.

Question 5 *What is the nature of your relationship with tribes and/or tribal organizations in your district?*

Response Type	*No. Responding*
Good	*10*
Fair	*3*

Ten respondents indicated that their agency relationship with the tribe(s) in the district was good. The reasons cited for the quality of the relationship were related to the consistent presence of VR on the reservation, active involvement with tribal social service agencies, especially the tribal education department, mental health, or the reservation alcohol and drug treatment agency, usually under mental health or IHS. Use of indigenous liaison personnel, including rehabilitation technicians, counselor's aids, JTPA staff, and educators or mental health staff, was considered instrumental in increasing visibility and trust. Five district managers indicated that relations with social service personnel were more fruitful than with tribal councils. Seven warned against unnecessary governmental interaction, suggesting that VR seek to establish a non-partisan, educational presence. In two of the three Indian VR projects, district VR personnel participate in an advisory capacity.

The three district managers reporting a fair relationship indicated increased communication and education efforts were necessary on both sides, but that a history of limited success in spite of a consistent VR effort was the reason for less than adequate tribal -VR relationships. One respondent indicated that the traditional VR model will not work due to the limited understanding and motivation of the Indian clients and limited employment opportunities on the reservation.

Question 6 *What kinds of cooperative efforts have occurred in the past between the State VR and tribes or tribal organizations?*

Eleven respondents reported that cooperative efforts are central in current service delivery approaches for Indian clients, and will be important in improving service delivery. Cooperative efforts include State VR-tribe and interagency cooperation. Cooperative efforts between the State VR and the tribe include use of tribal owned facilities by the VR, and referral assistance from tribal educational departments and mental health services. State-tribal cooperation evidenced in the development of training programs on or near the reservation was reported by three respondents. Four respondents indicated active participation in Section 130 proposal development by tribes in their districts.

Seven respondents reported that cooperative efforts are successful when individual commitment exists on the part of VR and tribal personnel. A sheltered workshop and active disabled advocacy group were established on one reservation as a result of cooperative efforts. Alcoholics Anonymous groups on reservations resulted from State-tribe cooperation. Cooperative efforts, report three respondents, enables VR efforts to be tailored more appropriately to the needs and circumstances on the reservation.

Interagency relations vary, according to the respondents. Seven cited regular contact with IHS. Descriptions of the State VR-IHS relationships ranged from cooperative to routine sharing of information. Cooperation and communication with tribal social services was indicated by eight respondents as important for identifying clients and educating the tribe about VR. Consistent presence and effort over time is necessary to develop dependable, cooperative efforts.

Question 7 *How would you facilitate increased cooperation and communication with tribal organizations in order to improve VR services to Indians?*

In answering this question most respondents reported on past successful experiences and current or planned efforts of their agencies. Ten respondents indicated that a very consistent presence on the reservation is required to facilitate cooperation and communication, as well as more effective outreach efforts, which would increase trust and, therefore, confidence, which in turn would facilitate more rapport between the State VR and the tribes. In addition, the respondents reported that ideally one counselor would serve a reservation, and that trust be established over time at the service delivery level. Five respondents reported more than ten years serving tribes in their district; they report good rapport and depend on tribal assistance.

The establishment of liaison relationships which facilitate improved State VR-tribal communication is considered important by nine respondents. Liaison personnel include a variety of individuals, such as resource persons in other social service agencies which serve the reservation, a paraprofessional hired to work on the reservation in a part-time or full-time capacity, a tribal member working out of a district VR office, or an influential tribal member. Nine respondents cited the importance of having American Indians on staff or in liaison positions. But three respondents noted that problems had occurred in their district when a member of one tribe was sent to work with a different tribe.

Six respondents reported that formal agreements have been established between their agency and tribes. Four other respondents indicated plans to develop formal agreements to increase understanding on both sides and clearly define the role and responsibilities of VR.

Six respondents reported that increasing communication must precede cooperative efforts. One respondent indicated that positive results in his district did not occur until a counselor had spent over two years of consistent effort and presence on the reservation. Tribal government instability, reported by seven respondents, make the development of stable relationships at the governmental level difficult.

Question 8 What in-service training relative to Indian cultures and VR needs has been conducted for your staff which serve Indian clients?

Response Type	*No. Responding*
None	*9*
VR in-service with cultural orientation	*3*
Training conducted by tribe	*1*

Nine respondents indicated that the State VR conducted no special in-service for counselors serving Indian clients. Four out of the nine "no" respondents indicated that the criteria for hiring a counselor to serve reservation clients is previous reservation experience. Three respondents reported that cultural orientations and staff development programs are conducted in all district offices serving reservations. In one district the tribal education department conducts workshops for all non-Indian social service providers, which cover customs, culture, and history.

Question 8.1 Do you feel there is a need for in-service training in this area?

Response Type	*No. Responding*
Yes	*7*
No, would not hire counselor without reservation experience	*4*
No	*2*

Eleven respondents indicated that orientation to and sensitivity of cultural differences and special needs and problems of reservation Indians would and/or does benefit VR staff serving Indian clients. Seven of the eleven respondents indicated that this should be covered in special in-service programs; four respondents indicated that a prerequesite for working with reservation clients is previous reservation experience. Two respondents indicated that no in-service specifically targeting Indian issues is necessary.

Question 8.2 Have you requested input from tribes in developing training and in-service for staff serving Indian clients?

Response Type	*No. Responding*
Yes	*3*
No	*9*
Tribe has own program for VR counselors	*1*

Question 8.3 Are cooperative training programs which include both Indian representatives and your staff--to increase interaction and understanding on both sides--planned for the future?

Response Type	*No. Responding*
Yes	*2*
No	*4*
Would be a good idea, will recommend	*7*

Two of the thirteen respondents reported that efforts have been made to develop cooperative programs for VR staff and tribal representatives to increase mutual understanding and communication. An additional seven respondents indicated that this was a positive option and will consider recommending it for their agency.

Relationship Between American Indian Population Characteristics and State VR Agency Policies and Activities

A statistical analysis was conducted to determine if demographic characteristics of the States' Indian populations was found to be related to response choices by the State directors or designees. The responses reflected the States' policies and current program activities related to providing VR services to Indian clients. In the statistical analysis, three tests were used to determine if a relationship exists. As indicated in Table 2, several bivariate relationships turned out to be statistically significant (using the customary maximum alpha-level cutoff of .05, common in social science research). Results of the three correlations applied across to all the relationships are in Appendix E-2.

A significant direct (positive) association was found between total American Indian population and staff responsibility. That is, higher Indian populations for the state are associated with the designation of a program specialist or liaison person responsible for examining current levels of service to American Indians and implementing changes identified in the 1986 amendments. Total population is positively associated with priority level of improving VR services to American Indians. The next significant association in the data set is between identification of staff responsibility and the number of recognized tribes. As with the population variable, the designation of staff responsibility is positively associated with the number of recognized tribes. The final two relationships deal with the number of reservations in the state. It is positively and directly associated with the priority to improve rehabilitation services to American Indians as reported by the State directors, and the strategies identified for consultation with tribal entities. A greater number of tribes within a state is associated with the tendency to consult with inter-tribal councils or invitation to all tribes to attend statewide public hearings. A fewer number of tribes is associated with individual State consultation with individual tribes.

Table 2

Relationship Between American Indian Population Characteristics and State VR Agency Policies and Activities*

	Designation of staff [1] responsibility	Priority of improving [2] VR service to Indians	Consultation [3] approach	Preferred [4] strategy
Total Indian Population	+	+	0	0
Percent of State Population	0	0	0	0
Number of Recognized Tribes	+	+	+	0
Urban or Rural residence of majority of States Indian Population	0	0	0	0

*. + indicates significant relationship found.
0 indicates no relationship found.

1. Question 4 - Has a staff person been designated as responsible for addressing legislative changes related to American Indians? Yes ___ No ___
2. Question 5 - In establishing initiatives for your State, how would you rank improving/expanding VR services to Indians in your service priorities? ____High ____Medium ____Low
3. Question 6.2- What do you plan to do in response to the requirement to "actively consult" with tribes and tribal organizations on State Plan?
4. Question 7 - Which do you think is the best strategy to improving/increasing VR service to reservation-based Indians?
    a) building VR services for Indians within existing State structures, or
    b) helping tribes secure funding for creating tribally administered programs, or
    c) combination of above--tribal programs operating in conjunction with existing services.

Indian VR Project Director Questionnaire

Indian VR project directors were asked to describe current relationships with the State VR, and cooperative efforts with the State VR and other service providers in case management, staff training, and coordination of services. The questionnaire was designed to assess from the perspective of project directors the changes in VR service delivery to tribal members on their reservation since implementation of the Indian VR project. Barriers to VR service delivery to reservation Indians and strategies to remove or overcome barriers were also addressed. Each project is responding to a singular goal--the establishment of a VR program on the reservation addressing the special needs and problems of Indians with disabilities. The projects are serving a client population which has traditionally been difficult to identify and serve.

Three Indian VR projects were funded in FY 87 under Section 130. These projects present three distinct models of VR projects designed for implementation on the reservation, specifically created for increasing access and availability of VR services for Indians with disabilities residing on the reservation. The three Indian VR projects are : (1) Navajo Vocational Rehabilitation Project (Arizona); (2) Fort Hall Vocational Rehabilitation Project (Idaho); and the Rocky Boy Vocational Rehabilitation Project (Montana).

The Navajo Reservation is the largest in the United States with a total population of over 160,000 people. The Navajo VR Project (NVRP) which has been in operation for 12 years provides a full range of VR services. In 1985 NVRP served over 502 clients (this includes all active cases and those in extended evaluation), including 50% who were individuals with severe handicapping conditions. The scope of the project and length of time since inception makes NVRP the oldest Indian VR project and represents a model of a large VR agency developed in the context of Navajo values, customs, and culture, which works in close communication and cooperation with three State VR agencies (Arizona, New Mexico, and Utah), and three Regional RSA offices (Regions 6, 8, 9).

The Fort Hall VR project in Idaho is in its first year of operation. The reservation population is 3,655. There are currently 55 active clients, and an additional 55 clients in applicant status. Fort Hall is 10 miles from the nearest VR district office.

The Rocky Boy VR project in Montana started in late 1985. The reservation population is 2,484. The program focuses on training programs at the community college on the reservation. Since inception 39 clients have been served, while 16 are currently enrolled in training. Forty clients are currently in applicant status.

State VR administrators in states with Indian VR projects were asked to comment on the relationship between the State VR and Indian VR project, as well as the nature of communications and cooperation which has taken place and/or is planned for the future. Given that there are no precedents for such a relationship, the relationships between each Indian VR project and the State VR have developed independently and differently. Many factors have influenced this, such as size of Indian population served by the project, the history of VR service delivery to the reservation, past cooperative efforts, and resources available on or near each reservation.

Question 1 *How have VR services to Indian people changed since implementation of the Indian VR project on your reservation?*

The three project directors cited positive results since project implementation. Their comments included the following:

1. Services are localized on the reservation and provided on a full time basis.
2. More training is available on the reservation.
3. In spite of economic conditions, more efforts are made to place clients on the reservation.
4. Travel and language barriers are addressed with an on-reservation project.
5. Services are provided by Indian people.
6. More American Indians on the three reservations are receiving VR services.

Question 2 *What was the nature and extent of State VR input into the development of your Indian VR project?*

The amount and nature of State VR input into the development of Indian VR projects varied across the projects. Establishment grant funding through the State of Arizona was provided to NVRP before Section 130 funding became available. Arizona VR input into the development of NVRP was extensive. NVRP has the longest history and has developed a positive and cooperative relationship with State VR agencies in three states. The Idaho VR district manager was consulted during the development of the proposal at Fort Hall and currently acts in a advisory capacity. The Montana district manager in Havre, Montana, acted in an advisory capacity during project implementation at Rocky Boy. Fort Hall and Rocky Boy are in their first year of operation. The respondents reported that relationships with the State VR must still be defined and developed. All Indian VR agencies suggested that the State can assist their service delivery by providing and sharing in-service training and technical assistance. Cooperative relationships are perceived by all Indian VR projects as essential to their success and important in assuring that their reservation will be served with a full range of VR services.

Question 3 *How far is your tribe from the nearest State VR counselor's office?*

Responses ranged from 10-180 miles. Thus, distances are often great, and the project directors of Rocky Boy and Navajo indicated that winter conditions made traveling extremely difficult. Transportation had previously been a barrier for these reservations.

Question 4 *Describe your on-going contacts with the State VR.*

Again with 10 years of history NVRP has extensive and consistent interaction with the Arizona, New Mexico, and Utah State VR agencies at the central and district levels, and three RSA regional offices as well. Rocky Boy and Fort Hall reported that most of their contacts were at the district office level. The Idaho State VR entered into a cooperative agreement with the Shoshone-Bannock Tribe to provide rehabilitation assistance.

Question 5. *Have you been contacted or consulted yet by State VR personnel regarding the new legislation?*

Response Type	*No. Responding*
Yes	*1*
No	*2*
Total	*3*

Regarding the State Plan?

Yes	*1*
No	*2*
Total	*3*

NVRP has been in contact with the Arizona State VR and a meeting with the administrator is scheduled. Both Montana and Idaho VR plan to meet and consult with tribes regarding the State Plan.

Question 6 *Have you initiated contact with the State VR regarding legislative changes related to VR services for Indians?"*

Response Types	*No. Responding*
Yes	*3*
No	*0*
Total	*3*

Question 6.1 What strategies do you recommend to the State for facilitating tribal involvement in the development of State Plan?

All three project directors have contacted the State VR concerning the legislation. Strategies suggested for facilitating tribal involvement in State Plan development include:

1. Appointment of a liaison position at the State office responsible for overseeing planning and compliance with legislation.
2. Concerted efforts by the State to increase communication, where necessary.
3. Developing technical assistance for both sides; including in-service for State VR and tribe together to develop communication mechanisms and trust, and to discuss VR in the context of Indian culture and Indian reservations.

Question 7 What do you think is the best strategy for improving/increasing VR services to reservation Indians?

Response Types	*No. Responding*
Building VR services for Indians within existing State structure	*0*
Securing funding for creating tribally administered VR programs	*2*
Combination of above, tribal programs operating in conjunction with existing services	*2*
Total	*4*

One project director indicated that both securing funding for independent Indian VR projects and a combination of tribal programs operated in conjunction with the State VR were positive options.

All project directors reported that they seek to establish projects which operate to address the special needs of reservation Indians, and thus assert the need for independent administrative control, but seek guidance and assistance from the State VR. NVRP has developed a functional working relationship, maintaining its independence while working in conjunction with the State VR in many areas, such as training, evaluation, technical assistance, and information management. Fort Hall and Rocky Boy reported that they have yet to establish the parameters of their working relationships and cooperation with State agencies, while maintaining their independent status.

Question 8 *If an Indian is a member of a tribe with its own VR project, is he/she eligible for State VR services?*

All project directors reported that members of their tribe may still apply for VR services through the State agency. The decision is up to the individual. Since project implementation, the State VR counselors no longer visit the reservations on a regular basis.

Question 9 *Are there any formal or informal arrangements for cooperation with the State VR when a client of an Indian VR project requires assistance or counseling off-reservation?*

The project directors reported that courtesy counseling is provided by the State VR agency for Indian VR project clients, as needed, similar to serving a VR client from another state. Courtesy counseling is not intended to become a formal or long term relationship, but rather is relied on in crises or for short term problems. Fort Hall has some shared clients with the Idaho VR agency.

Question 9.1 *What State VR services do your clients participate in?*

NVRP and Fort Hall indicated that their clients participate in State-provided evaluation and training programs. Rocky Boy reported that they are seeking to work toward a cooperative agreement with the State VR to participate in some state services.

Question 10 *Is an Indian from a different tribe or reservation eligible to be served by your VR project?*

Response Type	*No. Responding*
Yes	*3*
No	*0*
Total	*3*

Question 10.1 *What is the Criteria for Eligibility?*

Fort Hall's eligibility requirements state that an individual must live within the boundaries of the reservation, must be enrolled in a federally recognized tribe, and meet the eligibility requirements for VR. Rocky Boy requires reservation residence and eligibility for VR. NVRP requires that an individual meet VR eligibility requirements.

Question 11 Are your services comparable to those provided by the State VR?

The respondents reported differences across projects regarding their comparability to the State VR. NVRP offers a full range of VR services including diagnostic evaluation, counseling, training, placement, and follow-up. Most medical services are covered under IHS funding. NVRP has offices at several locations on the reservation, and is more accessible on a regular basis than were the State VR services. In some areas NVRP is unable to provide comparable services with additional funding necessary for independent living projects and in-service training.

Rocky Boy has a small scale program and at this time does not attempt to provide a full range of VR services to all eligible clients. It has focused its efforts on developing a broad-based training program at a community college on the reservation. The program seeks to provide evaluation, counseling, training, and facilitates the provision of some medical restoration, but is unable to provide independent living, or supplemental employment. Rocky Boy targeted one service provision strategy, for the early stage of project implementation, to provide a high quality, comprehensive program to one client population. It is unable to serve the most severely disabled within the current project orientation.

Fort Hall has developed a small program providing a full range of VR services within its limited funding. Since its inception it has made several program modifications which evidence strong commitment to the developmentof a full service VR agency.

Question 12 What are your staff training needs?

Project directors indicated that participation in State VR training and in-service would be valuable for their staff. All respondents indicated that some training and in-service should be conducted on the reservation, provided by the State VR. The topical areas identified indicated the projects are seeking to address the following issues:

1. mental illness
2. motivating clients
3. dealing with anger
4. learning disabilities
5. back injuries and pain
6. alcoholism
7. networking
8. developing individualized plans

Question 12.1 Does your staff participate in State VR training/in-service programs? Does the State VR offer training/in-service for your staff on your reservation?

NVRP and Fort Hall staff participate in some State VR training and staff development. Rocky Boy reported that they seek to establish a cooperative agreement which includes participation in State VR training or in-service. No training or in-service are currently offered by the State VR on the reservations.

Question 13 What support/commitment to your project are you currently receiving from your tribal government?

All project directors reported receiving strong support and commitment from their tribal leadership. This is evidenced by the commitment of funds and resources, affirmative action commitment, and construction of ramps for accessibility to reservation facilities. The Navajo Tribal Council has established a trust fund for handicapped people. The directors reported that the presence of the project on the reservations has increased awareness of VR and of disabling conditions. The tribal councils' level of commitment to and investment in the success of the projects is perceived by the project directors to be high.

Question 14a. What barriers or obstacles are you aware of to improving/increasing VR services to Indians?

Question 14b. Have you any ideas about how to remove or overcome barriers or obstacles to improving/increasing VR services to American Indians?

The lack of job opportunities on or near the reservation was cited by all project directors as a major barrier to successful vocational rehabilitation of Indian clients. They reported that the promotion of economic development which would stimulate creation of jobs is essential, since unemployment on the reservations run from 30% to 60%. It was also reported that the lack of transportation affects disabled Indians' ability to meet appointments, as well as participate in training programs off the reservation. Residential training facilities on or near the reservation would help. All project directors believe the use of Indian VR counselors to serve Indian clients has multiple benefits, including sensitivity to and identification with customs, culture, language, and life on the reservation. The presence of an Indian VR Project on the reservation on a full time basis increases the visibility of VR and better understanding among the tribe of handicapping conditions, so that vocational rehabilitation assumes a more central and important role in tribal life.

Question 14c. What new opportunities does the legislation create for your tribe?

The directors reported that the legislation provided an opportunity for all Indian VR projects to obtain funding through Section 130. Indian VR projects provide the opportunity for a tribe to develop VR services within a culturally appropriate context for their disabled tribal members, a population which has in most states been underserved. The three currently funded projects are different in size and scope. The directors reported that their Indian VR projects were created independently with no ongoing models available for direction. Each has evolved since inception and changed through self assessment and in response to community needs. Project directors see their programs as models for future Indian VR projects.

Question 15 What resources and/or information would be helpful to you, and possibly other tribes, during the early state of planning and implementing the new legislation?

All project directors indicated that a wide range of State VR training and in-service programs for their staff would be beneficial. Respondents mentioned VR related issues, such as intake, counseling individuals with multiple disabilities, IWRP development and medical topics addressing disability, treatment, major illnesses, and emotional and psychological disabilities. Also the directors reported that an important part of staff development is in-service programs addressing special problems affecting American Indians, especially alcoholism and drug abuse. The Indian VR project directors indicated that they each seek greater cooperation and involvement with the State VR in development of and participation in relevant in-service and staff development programs.

The three Indian project directors each reported that Indian tribes which apply for vocational rehabilitation service grants should consult extensively with the State VR agency to be sure the program is comparable in quality and scope and to define staff training needs. Indian VR project directors indicated that they will need to rely on some State VR assistance to provide a full range of VR services to individuals in their community who are disabled.

The Indian VR projects directors reported many potential sources for technical assistance: RSA, State VR, IHS, and the Research and Training Center. They view their projects as models and indicated that they have much experience to share with new Indian VR projects, as well as with State VR agencies. In response to this question the directors offered to share their experiences from the development of their VR projects, their perceptions of barriers to serving Indian people, and suggestions for improving VR service to reservation Indians with other VR agencies.

Summary

In this section the nature and extent of cooperative efforts was examined through an assessment of current policies, strategies, and activities of State VR and Blind Services agencies in relation to the provision of services to American Indians with disabilities. Three groups of respondents participated in three sets of structured interviews: (1) State VR and Blind Services agency administrators and/or their designees in 27 states with significant Indian populations; (2) District VR managers representing a sample of districts which serve reservation Indians in the identified states; and (3) Indian VR project directors.

Specific issues addressed by the State administrators include current or past special efforts aimed at improving VR service to American Indians, planning activities related to consultation with tribes in the development of the State Plan, perceived barriers to serving American Indians and solution strategies for removing or reducing the barriers. District VR managers responded to questions addressing service delivery issues, such as outreach efforts, staff training, establishing relationships and facilitating communication and cooperation with tribes and other social service agencies, and special problems encountered in serving Indian clients. Indian VR project directors focused their responses on changes in VR service delivery to their reservations since project implementation, and the relationship and extent of cooperation with State and district VR personnel and programs.

State Administrators

The State VR and Blind Service agency administrators or designees reported that their agencies are aware of the 1986 amendments to the Rehabilitation Act and are developing strategies and policies to respond in the context of their total VR programming needs. The importance of the issue varied across the respondents. Responses differed across States due to many factors, some of which are total Indian population, number of recognized tribes, residency patterns of Indian populations, experience in previous efforts to serve reservations, and organization and efforts of other advocacy groups.

Cooperative agreements had been established or were planned in ten states. Respondents supporting cooperative agreements reported that the respective roles and expectations are defined, creating a binding relationship between the State VR and the tribe. Varying degrees of success of special initiatives were reported. Successful initiatives were reported where relationships with resource persons on the reservation were established. That relationship is usually initiated by a district staff person. Individual site-specific efforts developed on a small scale with the support of the tribal liaison or resource person and tailored to the needs and circumstances on the reservation were reported as most successful over time for improving vocational rehabilitation services to American Indians with disabilities.

Development of employment opportunities on or near the reservation was cited by respondents of the three respondent groups to be central and necessary to improving and increasing VR services to American Indians with disabilities. The respondents indicated that some alternatives to relocation and competitive employment must be developed. The building trades training program, funded under JTPA, operating in conjunction with a federal housing grant to build homes on one reservation is a good model, enabling training and placement on the reservation. Such a program may provide a link between unemployment and competitive employment.

Half the respondents reported that staff responsibility to coordinate planning and implementation efforts in response to the amendments had been designated. The reasons supporting staff designation included the need to identify centralized responsibility for increasing communication with the tribes within the State, and as evidence of commitment to improving VR service delivery to American Indians. One-fourth of the respondents indicated that central staff responsibility was not necessary, but that increased field staff responsibility is necessary.

Half of the respondents reported that their agency had not made plans to meet independently with either individual tribes or inter-tribal councils, but had invited Indian tribes to testify at public hearings held throughout the State. Respondents indicated results were poor thus far, and added that in the past Indians had not participated in such a forum. Comments by the respondents suggested it was not an effective vehicle for increasing State VR-tribe communication, but nevertheless half of the respondents indicated their agency would rely on public hearings to solicit input from all consumer groups in the development of the State plan. Ten respondents indicated that their agency would consult with individual tribes in the State; eight agencies in states with a large number of tribes plan to consult with the inter-tribal council comprised of representatives from each tribe.

Sixty percent of the respondents representing agencies which planned to consult with tribes or tribal organizations indicated that consultation is most appropriately and effectively conducted by the counselors who serve reservation. Forty percent of the respondents reported consultation would be initiated by the State VR central office. Half the respondents indicated that the lack of stability of tribal leadership makes identification of leadership difficult and is a barrier to the establishment of stable long-term relationships. Cooperative agreements have been compromised in some districts by a change of tribal government.

Most respondents were aware of some barriers to serving Indian clients. The most commonly mentioned barrier was lack of employment opportunity on the reservation. Suggestions for removing or decreasing barriers or obstacles focused on the following:

1. Facilitate development of employment opportunities for Indians with disabilities on or near the reservation.

2. Increase sensitivity of VR staff to cultural differences.

3. Establish a relationship between State VR and reservation resource/liaison individual to facilitate improved communication mechanisms with the tribe.

4. Improve interagency communication, cooperation, and coordination in order to develop a comprehensive approach to VR service delivery.

5. Provide as many services as possible on the reservation.

Respondents reported mixed reactions to Part D, Section 130, vocational rehabilitation service grants. The special project funding to establish Indian VR projects is viewed by one-fourth of the respondents as an opportunity to improve VR services to American Indians with the establishment of on-reservation programs, developed on the basis of local needs and circumstances. These respondents viewed this as a positive opportunity for the tribe and for the State VR. Three-fourths of the respondents are not supportive of the separate funding or are reserving judgment until interpretations of the State VR role and responsibility relative to Indian VR projects is clarified. Most respondents look to the RSA Regional Office during the planning stage for technical assistance and interpretation of the amendments and regulations.

District Managers

The interview with the thirteen VR district managers provided information at the service delivery level on current activities and experienced perspectives from individuals who serve reservation clients. All districts selected for the sample included significant Indian populations and reservations. The majority of the district managers emphasized that the quality and longevity of the State VR-tribe relationship was closely related to successful efforts on the reservation.

The respondents agreed that a liaison person plays an important role in increasing the acceptance and trust of State VR personnel. The majority of the districts have identified or hired liaison personnel, in an official VR function or in conjunction with IHS, tribal education department, mental health services, alcohol and drug treatment center, or JTPA. Liaison personnel assist in identification and referral of clients and act to interface between the tribe and the State VR.

The district managers reported that dependable relationships with resource people on the reservation were central in their successful efforts, but most had determined through experience that VR should seek to develop an educational, rather than political presence on the reservation. Relations with tribal councils were formal, interacting when invited or when introducing an initiative or cooperative agreement proposal. Frequent changes in tribal governments make establishment of long term governmental relationships difficult.

It was significant that all respondents reported that the costs of rehabilitation are lower for Indian clients, indicating that a barrier to increasing or improving services to Indian people is not insufficient funding sources. Barriers are cultural, institutional, geographic isolation, and limited availability of VR services which often require client relocation off the reservation for continuation in VR.

Ten of the thirteen district managers reported that reservations in their service area are served on an itinerant basis. Indian clients must fit into a schedule of service on one or two days a month. Many district managers indicated that similar circumstances confront most rural clients, but agree that the cultural differences add difficulty to serving Indian clients within a rigid and infrequent service schedule. Access is limited, therefore, by the limited availability of the counselors on the reservation. The presence of an identifiable liaison on the reservation would increase the potential for contact and assistance here.

High unemployment on the reservation was reported by all respondents as the greatest deterrent to successful VR services to reservation clients. Most individuals experienced in serving reservation Indians agree that relocation for training and placement has other associated problems, but unless economic activity can be generated on or near the reservation, there are not enough employment opportunities to place all eligible clients on the reservation, even with self employment and other alternatives to competitive employment. Economic development on or near the reservation, according to the district managers, is the key, and must occur in tandem with other positive efforts in order to improve services to Indians who are disabled residing on reservations. With training and employment opportunities on the reservation, some of the cultural, linguistic, and geographic barriers could be decreased.

Indian VR Project Directors

Indian VR project directors indicated that the lack of access to and/or participation in VR services by their tribal members influenced the development of an Indian VR project. A major strategy for implementation was reported to be the hiring of Indian staff to facilitate the provision of VR services in a context of familiar values, customs, and culture to American Indians with disabilities on their reservation.

The Indian VR project directors reported that the implementation of the VR Indian projects has resulted in a full time VR presence on the reservation and an increase in the number of Indian clients served. However, a lack of training and employment opportunity on or near the reservation was reported to continue to exist.

Indian VR project directors reported varying degrees of communication and cooperation with the State VR agency. Assistance was provided at the State and district level for NVRP and at the district level to the Fort Hall VR project and the Rocky Boy project. Given the recent implementation of the Fort Hall and Rocky Boy projects, additional interaction and communication may increase familiarity and rapport. The State VR directors indicated a need existed for direction from the Indian VR project regarding assistance and involvement from the State VR with the projects.

State VR administrators indicated that the presence of an Indian VR project in the State is a positive opportunity, a chance to address the service delivery barriers with different, more culturally appropriate service strategies. But with Fort Hall and Rocky Boy, more time is required in order to measure the effects on service delivery and to determine the appropriate role of the State VR in service delivery responsibilities on those reservations.

Staff development and in-service training were cited by the project directors as important priorities and essential to providing services comparable to the State VR agency. Indian VR project directors indicated that ideally project staff would participate in State VR training programs, and, additionally, the State would provide in-service on the reservation targeting topics specifically relevant to serving American Indian clients.

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A STUDY OF THE SPECIAL PROBLEMS AND NEEDS OF AMERICAN INDIANS WITH HANDICAPS BOTH ON AND OFF THE RESERVATION

VOLUME III

Appendices

Prepared for

U. S. Department of Education
Office of Special Education and Rehabilitative Services
Rehabilitation Services Administration

September 14, 1987

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The Study of the Special Problems and Needs of American Indians with Handicaps Both On and Off the Reservation consists of these three volumes. Volume I provides an Executive Summary of the study findings, recommendations and conclusions, and future research needs. Volume II consists of five individual study reports, representing the data, analysis, and summary of the studies. Volume III provides appendices to the individual study reports.

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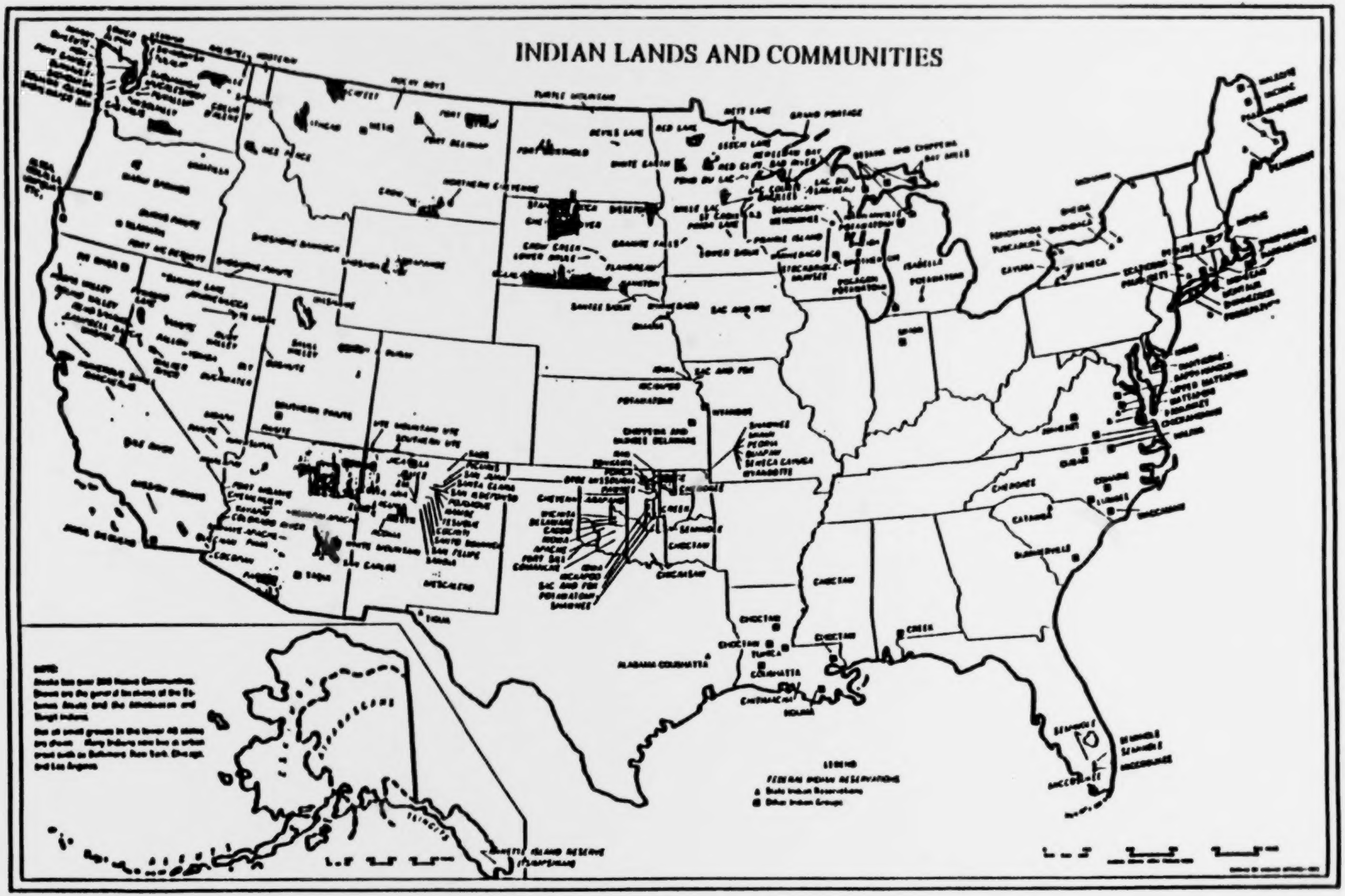
APPENDIX A-1

Indian Lands and Communities

Indian Lands and Communities


INDIAN LANDS AND COMMUNITIES
LEGEND
FEDERAL INDIAN RESERVATIONS

Source: American Indian Policy. Theodore W. Taylor 1983, Lomond Publication, Inc. MT.Airy, Maryland

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APPENDICES B-1 through B-8

Appendix B-1

Projected Frequency of American Indians in Each Category in Each State and Total Projected American Indian Enrollment in Each State

State	EMR	TMR	SI	SED	LD	Total A.I. Surveyed
Alabama	140	31	135	13	133	7,740
Alaska	115	82	650	55	1,669	20,157
Arizona	369	192	685	507	3,028	58,270
Arkansas	2	0	8	0	30	447
California	51	23	397	30	1,115	27,393
Colorado	16	3	23	31	88	2,985
Connecticut	0	0	6	4	27	1,084
Delaware	0	0	5	0	13	125
D.C.	0	0	0	0	0	34
Florida	4	9	25	11	46	1,909
Georgia	1	0	5	0	1	418
Hawaii	0	0	2	2	14	432
Idaho	45	8	61	0	181	2,553
Illinois	31	2	73	16	164	1,556
Indiana	3	0	2	0	5	1,152
Iowa	26	2	4	12	80	1,076
Kansas	31	10	95	22	147	3,453
Kentucky	2	0	2	0	2	106
Louisiana	8	1	10	3	15	775
Maine	11	4	11	8	10	320
Maryland	3	6	16	6	48	806
Massachusetts	1	0	0	0	1	753
Michigan	222	6	150	57	472	16,575
Minnesota	288	27	558	207	892	9,832
Mississippi	2	2	6	0	3	313
Missouri	4	0	9	7	25	641
Montana	181	57	935	76	1,413	21,241
Nebraska	33	4	42	25	75	1,482
Nevada	24	2	85	2	235	3,536
New Hampshire	0	0	0	0	3	55
New Jersey	0	7	6	4	20	899
New Mexico	259	71	366	120	1,561	24,057
New York	25	5	5	20	64	3034
North Carolina	1,323	132	667	53	1,684	33,468
North Dakota	135	11	367	42	485	7,089
Ohio	38	0	37	2	5	1,944
Oklahoma	951	142	2,311	28	2,600	58,945
Oregon	13	20	195	50	460	6,346
Pennsylvania	61	1	9	5	63	1,495
Rhode Island	8	2	9	0	42	446
South Carolina	87	9	39	7	37	1,210
South Dakota	114	42	423	27	303	7,545

Appendix B-1 (Continued)

Projected Frequency of American Indians in Each Category in Each State* and Total Projected American Indian Enrollment in Each State

State	EMR	TMR	SI	SED	LD	Total A.I. Surveyed
Tennessee	3	0	6	1	26	301
Texas	10	18	55	18	138	3,561
Utah	58	5	75	172	248	4,281
Vermont	3	0	1	4	4	92
Virginia	7	0	13	3	38	820
Washington	162	26	139	66	810	13,553
West Virginia	0	1	0	2	3	70
Wisconsin	88	26	177	117	192	6,262
Wyoming	5	2	48	18	163	1,676
Total Projected	4,963	991	8,948	1,853	18,881	364,313

*Projected by OCR using weighted formula applied to survey results.

Appendix B-2

Numbers of Students in BIA Schools in Each State* in Each Handicapping Condition and Total Number Enrolled in Each State.

State						N					
	MR	LD	SED	MH	HI	VI	OI	OHI	SI	RH	Tot. En.
AZ	90	963	51	66	5	2	3	19	327	26	12,712
CA	0	18	3	0	0	0	0	0	0	0	592
FL	1	16	0	0	0	0	0	0	0	0	100
ID	2	15	2	0	0	0	0	0	6	0	93
IA	0	5	1	0	0	0	0	0	5	0	74
MS	15	126	0	5	2	1	2	1	115	0	1,126
ME	8	18	5	1	0	1	0	0	9	0	316
MN	1	185	9	0	0	0	0	11	47	0	600
MO	1	39	1	2	0	0	0	0	29	0	340
NM	123	831	35	58	6	4	8	4	373	8	8,693
NC	17	63	7	3	2	0	4	1	44	0	946
ND	40	190	45	10	1	0	0	0	347	0	3,346
OK	12	50	1	0	0	0	0	0	25	0	590
OR	15	46	2	2	0	0	1	5	60	3	557
SD	79	806	83	2	3	0	8	16	813	0	9,119
UT	3	37	2	0	0	0	0	0	23	0	225
WA	8	28	2	6	1	0	0	1	27	0	267
WI	3	54	14	0	0	0	0	0	39	0	304
WY	0	26	0	0	0	0	0	0	26	0	322

* Calculated by the authors using data supplied by BIA. This data permits duplicated count of students in categories of speech impaired and residential handicapped.

Appendix B-3

Percentages of Various Minority Groups in 1978 and 1984 Projected* by OCR as Handicapped Across All States

Category	Am. Ind. %	Asian %	Hisp. %	Blacks %	White %	Percentage of all students %
Total						
1978	.79	1.42	6.75	15.72	75.32	100.00
1984	.92	2.52	9.12	16.19	71.24	100.00
Percentage in Special Education Program						
EMR						
1978	1.73	.37	.98	3.46	1.07	1.43
1984	1.36	.31	1.15	3.09	1.00	1.34
TMR						
1978	.23	.15	.24	.39	.19	.23
1984	.27	.18	.27	.39	.21	.24
SI						
1978	1.87	1.85	1.78	1.87	2.04	1.99
1984	2.46	1.73	1.96	2.40	2.69	2.55
SED						
1978	.33	.10	.29	.50	.29	.32
1984	.51	.12	.36	.85	.57	.59
LD						
1978	3.49	1.27	2.58	2.23	2.32	2.31
1984	5.18	1.61	4.46	4.51	4.19	4.21
Total % Hand.						
1978	7.65	3.74	5.87	8.45	5.91	6.28
1984	9.78	3.95	8.20	11.24	8.66	8.93
Total % Increase	2.13	0.21	2.33	2.79	2.75	2.65

*Projected by OCR through use of weighted formula applied to survey results.

Appendix B-4

Percentages* of Various Ethnic Groups Classified as EMR in American Public Schools, 1984-1985

State	N.A.	Asian	Hisp.	Black	Min.	White
Alabama	1.86	0.41	0.60	6.04	5.91	1.72
Alaska	0.45	0.25	0.27	0.35	0.39	0.13
Arizona	0.86	0.43	0.94	2.51	1.11	0.60
Arkansas	0.44	0.68	1.45	5.30	5.14	1.46
California	0.30	0.15	0.33	0.65	0.37	0.29
Colorado	0.63	0.18	0.88	1.04	0.85	0.41
Connecticut	0.00	0.18	1.29	1.86	1.54	0.54
Delaware	0.00	0.10	1.31	2.44	1.43	0.59
Dist. Columbia	0.00	0.00	0.13	0.85	0.82	0.13
Florida	0.20	0.36	0.59	2.22	1.68	0.54
Georgia	0.36	0.33	0.61	2.61	2.54	0.77
Hawaii	0.00	0.55	0.73	0.93	0.57	0.47
Idaho	1.80	1.01	1.97	1.73	1.77	1.00
Illinois	0.83	0.31	0.75	2.50	2.00	1.11
Indiana	0.64	0.33	1.81	4.29	3.92	1.61
Iowa	2.08	0.58	1.73	4.25	2.91	1.68
Kansas	0.83	0.24	0.79	2.66	1.95	0.94
Kentucky	1.35	0.08	0.50	3.53	3.40	1.84
Louisiana	0.90	0.14	0.28	2.11	2.01	0.62
Maine	3.07	0.38	0.95	1.58	1.06	1.45
Maryland	0.38	0.19	0.25	0.52	0.49	0.33
Massachusetts	0.20	0.09	0.24	0.05	0.12	0.32
Michigan	1.10	0.55	0.87	1.64	1.58	0.94
Minnesota	2.45	0.75	2.14	4.24	2.72	1.21
Mississippi	0.52	0.25	0.61	3.17	3.16	1.04
Missouri	0.99	0.34	1.02	3.54	3.37	1.40
Montana	1.04	0.71	1.43	1.56	1.10	0.60
Nebraska	2.76	0.40	2.25	4.28	3.48	1.29
Nevada	0.65	0.22	0.51	0.91	0.68	0.35
New Hampshire	0.00	0.69	0.97	1.98	1.23	0.55
New Jersey	0.00	0.18	0.76	0.92	0.83	0.33
New Mexico	1.14	0.12	0.76	1.40	0.83	0.38
New York	2.25	0.71	3.80	4.93	4.16	2.00
N. Carolina	3.84	0.41	0.51	3.45	3.38	0.81
N. Dakota	1.93	0.59	1.03	0.53	1.52	1.19
Ohio	0.90	0.70	2.43	3.41	3.31	2.31
Oklahoma	1.34	0.18	1.05	3.85	2.72	1.25
Oregon	0.35	0.25	0.36	0.71	0.44	0.38
Pennsylvania	2.65	0.19	2.05	2.23	2.13	1.37
Rhode Island	1.29	0.32	6.45	1.21	0.82	0.64
S. Carolina	3.34	0.24	0.21	4.38	4.29	0.93
S. Dakota	2.08	0.60	1.07	0.98	1.67	0.98
Tennessee	1.04	0.31	0.59	2.72	2.65	1.22
Texas	0.37	0.15	0.69	1.23	0.83	0.42
Utah	1.02	0.60	1.11	1.81	1.02	0.55
Vermont	5.13	0.38	6.06	2.84	2.24	1.65
Virginia	0.83	0.29	0.46	2.13	1.84	0.59
Washington	1.33	0.43	1.09	1.90	1.15	0.78
W. Virgina	0.00	0.45	0.43	3.51	3.21	2.05
Wisconsin	1.19	0.59	1.21	2.15	1.89	1.01
Wyoming	0.54	0.57	0.79	1.32	0.80	0.48

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* All percentages calculated from reported OCR survey data.

Appendix B-5

Percentage* of Various Ethnic Groups Classified as TMR in American Public Schools, 1984-1985

State	N.A.	Asian	Hisp.	Black	Min.**	White
AL	0.34	0.00	0.40	0.67	0.66	0.31
AK	0.63	0.08	0.34	0.33	0.47	0.24
AZ	0.42	0.27	0.35	0.44	0.37	0.28
AR	0.00	0.07	0.18	0.45	0.44	0.25
CA	0.07	0.15	0.24	0.28	0.23	0.22
CO	0.14	0.10	0.28	0.27	0.26	0.16
CT	0.00	0.11	0.48	0.40	0.41	0.32
DE	0.00	0.52	0.44	0.64	0.62	0.40
DC	0.00	0.29	0.17	0.35	0.34	0.29
FL	0.46	0.26	0.36	0.43	0.41	0.27
GA	0.00	0.06	0.20	0.40	0.39	0.29
HI	0.00	0.29	0.14	0.35	0.29	0.27
ID	0.43	0.14	0.33	0.17	0.31	0.25
IL	0.24	0.18	0.14	0.25	0.22	0.31
IN	0.00	0.26	0.37	0.54	0.52	0.33
IA	0.30	0.31	0.31	0.58	0.46	0.42
KS	0.38	0.10	0.31	0.37	0.33	0.24
KY	0.00	0.49	0.25	0.49	0.48	0.42
LA	0.18	0.15	0.28	0.42	0.41	0.29
ME	0.61	0.38	0.00	0.00	0.25	0.12
MD	0.77	0.23	0.23	0.46	0.44	0.44
MA	0.00	0.05	0.07	0.01	0.03	0.07
MI	0.13	0.16	0.38	0.94	0.89	0.23
MN	0.45	0.23	3.06	0.47	0.69	0.50
MS	0.52	0.51	0.00	0.47	0.47	0.26
MO	0.00	0.04	0.00	0.00	0.01	0.02
MT	0.38	0.53	0.71	0.00	0.42	0.35
NE	0.39	0.17	0.53	0.61	0.55	0.49
NV	0.09	0.14	0.32	0.37	0.30	0.21
NH	0.00	0.00	0.19	0.15	0.11	0.12
NJ	0.28	0.16	0.28	0.28	0.27	0.18
NM	0.25	0.18	0.31	0.26	0.29	0.23
NY	0.45	0.12	0.21	0.22	0.21	0.16
NC	0.38	0.17	0.21	0.51	0.49	0.30
ND	0.25	0.59	0.52	0.36	0.33	0.34
OH	0.00	0.02	0.01	0.05	0.04	0.04
OK	0.30	0.25	0.28	0.55	0.44	0.36
OR	0.35	0.12	0.22	0.09	0.17	0.18
PA	0.19	0.11	0.47	0.33	0.34	0.20
RI	0.32	0.12	0.26	0.48	0.35	0.33
SC	0.30	0.08	0.85	0.54	0.53	0.30
SD	0.51	0.45	0.27	0.20	0.46	0.26
TN	0.00	0.22	0.59	0.51	0.50	0.24
TX	0.21	0.14	0.24	0.25	0.24	0.20
UT	0.18	0.15	0.24	0.16	0.20	0.13
VT	0.00	0.00	0.00	0.00	0.00	0.35
VA	0.00	0.19	0.10	0.43	0.39	0.27
WA	0.22	0.09	0.27	0.16	0.16	0.15
WV	1.96	0.34	0.00	0.49	0.47	0.34
WI	0.18	0.20	0.12	0.05	0.07	0.26
WY	0.22	0.19	0.19	0.63	0.23	0.18

*All percentages calculated by the authors from OCR Survey results (reported data).
**All minorities combined.

Appendix B-6

Percentage* of Various Ethnic Groups Classified as Speech Impaired in American Public Schools, 1984-1985

State	N.A.	Asian	Hisp.	Black	Min.**	White
AL	1.81	1.85	1.99	2.37	2.35	2.77
AK	3.36	2.08	1.78	2.28	2.82	2.24
AZ	1.56	2.23	2.10	2.07	2.03	2.19
AR	1.33	0.95	3.82	2.30	2.28	2.15
CA	1.70	1.28	1.92	1.98	1.82	2.12
CO	0.77	1.08	1.40	1.31	1.33	1.19
CT	0.69	1.47	2.15	1.93	1.98	2.63
DE	2.02	1.86	2.51	1.71	1.77	2.05
DC	0.00	0.14	1.06	0.57	0.58	1.31
FL	1.39	2.19	1.72	3.90	3.20	2.95
GA	1.82	1.21	1.79	2.46	2.43	2.55
HI	0.47	1.09	1.89	1.34	1.12	1.56
ID	2.36	2.73	2.49	2.42	2.50	1.93
IL	3.79	2.35	1.28	1.56	1.53	2.43
IN	0.21	3.46	5.87	2.64	2.98	3.73
IA	0.59	1.01	1.15	1.13	1.08	1.42
KS	2.37	2.37	2.24	2.61	2.50	2.52
KY	2.70	4.14	2.74	4.54	4.51	4.30
LA	1.44	0.75	2.13	2.66	2.59	2.52
ME	3.68	2.66	4.76	3.62	3.31	2.53
MD	2.04	1.67	2.58	3.23	3.09	3.02
MA	0.00	0.42	0.19	0.12	0.18	0.68
MI	0.97	2.01	1.82	0.81	0.87	2.26
MN	3.46	2.57	2.64	1.98	2.42	2.51
MS	2.09	1.53	0.61	3.05	3.04	2.94
MO	1.64	2.46	2.74	3.37	3.32	3.67
MT	3.43	1.77	3.22	4.17	3.31	2.28
NE	3.15	1.94	2.95	2.63	2.62	3.09
NV	1.96	2.56	1.85	1.42	1.77	1.72
NH	0.00	1.90	6.61	3.20	3.69	2.17
NJ	0.56	2.69	2.77	2.31	2.42	3.32
NM	1.54	2.23	3.39	3.72	3.12	2.59
NY	0.45	0.17	0.45	0.37	0.39	0.75
NC	2.01	1.91	1.79	2.72	2.65	2.14
ND	6.09	4.43	6.19	4.80	5.74	3.71
OH	1.20	2.78	2.28	1.49	1.55	2.53
OK	3.32	2.15	3.18	2.67	2.85	3.73
OR	3.31	1.87	3.01	3.04	2.69	2.38
PA	1.70	1.82	2.60	2.69	2.65	2.65
RI	1.29	1.03	1.31	2.50	1.85	2.97
SC	3.65	2.48	2.12	3.71	3.68	2.84
SD	5.55	5.74	4.29	4.33	5.37	3.71
TN	2.07	1.80	2.21	2.27	2.26	3.51
TX	1.82	1.06	1.76	1.72	1.72	2.22
UT	1.68	1.70	2.12	1.71	1.91	2.04
VT	2.56	3.03	3.03	0.95	2.24	2.59
VA	1.83	1.92	2.11	3.12	2.93	2.91
WA	1.07	1.02	1.35	1.06	1.11	1.27
WV	0.00	2.60	4.70	1.77	1.88	3.33
WI	2.37	1.42	2.21	2.64	2.49	2.40
WY	2.72	3.82	3.29	2.91	3.21	2.90

*All percentages calculated by the authors from OCR Survey results (reported data).

**All minorities combined.

Appendix B-7

Percentage* of Various Ethnic Groups Classified as Seriously Emotionally Disturbed in American Public Schools, 1984-1985

State	N.A.	Asian	Hisp.	Black	Min.**	White
AL	0.17	0.23	0.40	0.46	0.45	0.71
AK	0.30	0.04	0.21	0.52	0.30	0.28
AZ	1.00	0.36	0.47	1.43	0.66	1.09
AR	0.00	0.00	0.18	0.14	0.14	0.14
CA	0.10	0.03	0.08	0.27	0.11	0.25
CO	0.99	0.40	0.99	1.88	1.17	1.31
CT	0.69	0.23	1.60	2.78	2.18	1.30
DE	0.00	0.31	1.85	4.61	4.21	1.98
DC	0.00	0.00	0.00	0.52	0.50	0.00
FL	0.66	0.20	0.36	1.42	1.07	0.99
GA	0.00	0.25	0.77	1.09	1.07	1.14
HI	0.47	0.19	0.37	0.06	0.19	0.29
ID	0.00	0.00	0.13	0.52	0.11	0.17
IL	0.95	0.15	0.55	1.42	1.16	1.25
IN	0.00	0.11	0.21	0.50	0.45	0.31
IA	1.34	0.19	0.71	2.51	1.64	0.87
KS	1.09	0.16	0.30	1.09	0.83	0.65
KY	0.00	0.24	0.00	1.34	1.30	0.37
LA	0.54	0.04	0.15	0.49	0.47	0.30
ME	1.23	0.25	0.48	2.04	0.87	1.55
MD	0.64	0.09	0.23	0.37	0.35	0.36
MA	0.00	0.04	0.01	0.02	0.02	0.12
MI	0.37	0.26	0.54	0.69	0.67	0.96
MN	2.76	0.47	0.95	3.09	2.02	0.96
MS	0.00	0.00	0.00	0.09	0.09	0.08
MO	0.99	0.19	0.35	0.97	0.93	0.78
MT	0.47	0.18	0.18	0.52	0.41	0.38
NE	2.07	0.17	0.67	3.28	2.45	0.88
NV	0.09	0.14	0.21	1.14	0.66	0.49
NH	0.00	0.17	0.58	1.68	0.84	0.70
NJ	1.13	0.13	0.67	1.43	1.11	0.69
NM	0.41	0.35	0.80	1.67	0.78	1.10
NY	0.45	0.04	0.57	0.92	0.71	0.56
NC	0.19	0.13	0.21	0.68	0.63	0.41
ND	0.89	0.15	0.52	0.89	0.76	0.26
OH	0.30	0.05	0.23	0.39	0.38	0.32
OK	0.09	0.02	0.07	0.22	0.16	0.20
OR	0.96	0.10	0.44	0.89	0.53	0.58
PA	0.95	0.08	0.59	1.20	1.08	0.67
RI	0.00	0.04	0.15	1.14	0.62	0.57
SC	0.91	0.28	0.32	0.97	0.96	0.89
SD	0.51	0.15	0.00	1.18	0.50	0.17
TN	0.52	0.09	0.00	0.24	0.24	0.25
TX	0.37	0.10	0.43	0.59	0.47	0.91
UT	3.22	1.25	3.30	5.13	2.87	2.54
VT	2.56	0.38	1.52	0.00	0.52	0.42
VA	0.50	0.20	0.44	0.79	0.70	0.58
WA	0.68	0.14	0.34	1.28	0.62	0.57
WV	3.92	0.11	0.00	0.79	0.74	0.33
WI	1.58	0.17	0.95	1.97	1.71	1.23
WY	0.98	0.38	0.96	1.06	0.93	0.93

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*All percentages calculated by the authors from OCR Survey results (reported data).
**All minorities combined.

Appendix B-8

Percentage* of Various Ethnic Groups Classified as Learning Disabled in American Public Schools, 1984-1985

State	N.A.	Asian	Hisp.	Black	Min.**	White
AL	1.64	0.46	3.38	2.19	2.16	3.67
AK	8.47	2.29	5.06	10.71	7.81	5.04
AZ	5.78	1.58	5.45	6.88	5.54	4.50
AR	7.52	1.08	4.36	4.67	4.59	4.82
CA	4.22	1.17	4.24	6.27	4.17	4.87
CO	2.89	1.30	3.93	4.83	3.89	3.51
CT	1.15	1.81	6.79	7.33	6.80	5.43
DE	11.11	1.03	9.49	11.32	10.78	6.01
DC	0.00	0.00	1.52	2.87	2.80	2.78
FL	2.58	0.98	3.89	4.44	4.17	3.75
GA	0.36	0.51	1.96	2.31	2.26	3.43
HI	3.26	4.49	10.73	5.65	4.69	4.93
ID	8.00	2.01	5.86	7.44	5.75	3.80
IL	7.46	0.97	2.59	3.08	2.89	4.83
IN	0.42	0.70	2.74	3.24	3.11	3.22
IA	6.69	4.06	4.30	5.85	5.24	4.36
KS	3.71	0.48	3.09	4.21	3.54	3.52
KY	1.35	0.65	2.24	7.48	7.24	3.36
LA	1.98	0.26	1.92	4.05	3.89	3.75
ME	6.75	0.38	3.33	5.66	2.87	4.14
MD	6.12	1.64	5.35	9.12	8.44	5.65
MA	0.39	0.31	0.44	0.36	0.38	2.36
MI	2.81	0.77	2.45	2.27	2.26	3.54
MN	6.11	1.71	5.83	6.25	4.83	4.35
MS	1.57	1.02	3.66	3.25	3.24	4.27
MO	4.61	0.75	3.24	4.35	4.22	4.91
MT	6.49	1.24	6.34	4.43	5.99	4.20
NE	5.81	1.54	4.90	5.70	5.18	4.32
NV	6.11	1.52	4.56	10.64	7.27	3.94
NH	7.50	1.03	7.00	7.93	5.42	6.07
NJ	6.80	1.98	1.09	4.39	3.85	4.86
NM	5.53	1.53	5.01	6.65	5.11	3.80
NY	2.16	0.36	2.86	2.38	2.43	2.05
NC	5.07	0.69	1.95	5.70	5.52	3.99
ND	6.55	2.81	5.93	7.12	6.06	3.83
OH	0.75	0.42	1.95	2.32	2.26	3.43
OK	4.53	0.88	3.53	6.75	5.51	4.59
OR	6.97	1.26	6.46	8.13	5.37	5.28
PA	6.82	0.67	5.35	5.13	4.97	4.00
RI	7.42	1.82	5.00	9.66	6.80	8.09
SC	2.43	0.87	2.34	4.06	4.00	3.86
SD	4.35	2.27	3.22	4.72	4.05	3.78
TN	7.77	0.82	1.92	4.25	4.17	4.81
TX	3.74	0.63	4.72	5.03	4.68	4.09
UT	5.12	1.59	5.18	5.54	4.20	3.43
VT	2.56	2.27	1.52	3.79	2.76	4.78
VA	5.32	1.42	5.01	4.36	4.06	4.55
WA	6.04	1.53	4.95	8.89	5.15	4.58
WV	5.88	0.45	0.85	4.74	4.36	4.20
WI	3.82	0.54	3.06	3.96	3.62	3.37
WY	8.59	3.63	3.06	3.96	3.62	3.37

*All percentages calculated by the authors from OCR Survey results (reported data).

**All minorities combined.

APPENDICES C-1 through C-7

APPENDIX C-1

Chart for Conversion of ICD Codes to Rehabilitation Oriented Categories Based on RSA Disability Codes

Type of Disorder/Disability	RSA Codes	ICD Codes
Infectious & Parasitic Diseases		
Tuberculosis		
Likely Disabling	650	011.2,011.5,012.1,013,015, 018,137.0-137.4
Other		010-018 except above
Other Infectious & Parasitic Dis.		01-139 except above
Neoplasms		
Malignant	600-608	
Lung		162,197.0,197.3
Breast		174-175,198.81
Leukemia		204-208
Other Malignant Neoplasms		140-208,230-234 except above
Benign	609	
Likely Disabling		223-223.1,224-
224.1,225-		225.1,225.3,228.03
Other		210-229,235-239 except above
Endocrine, Nutritional, & Metabolic Diseases		
Diabetes Mellitus	614	
Likely Disabling		250.4,250.7
Other		250 except above

APPENDIX C-1 (Continued)

Chart for Conversion of ICD Codes to Rehabilitation Oriented Categories Based on RSA Disability Codes

Type of Disorder/Disability	RSA Code	ICD Codes
Malnutrition		263
Gout		274.0-274.19
Cystic Fibrosis	616	277.0-277.01
Other Endocrine, Nutritional, & Metabolic Diseases		240-279 except above
Diseases of the Blood & Blood Forming Organs		
Anemias	621-629	280-285
Other	619-620	286-289.9
Mental Disorders		
Psychoses	500	290,293-299
Neurotic Personality Disorders	510,522	300-301
Alcohol Dependence or Psychosis	520	291-303
Drug Dependence or Psychosis	521	292,304
Mental Retardation	530,532,534	317-319
Other Mental Disorders	522	290-319 except above
Nervous System & Sense Organs		
Diseases of the Nervous System		
Meningitis	303,323,343 363,383	320-322
Multiple Sclerosis	316,336,356 376,396	340
Hemiplegia	303,323,343 363,383	342
Cerebral Palsy	300,320,340 360,380	343

APPENDIX C-1 (Continued)

Chart for Conversion of ICD Codes to Rehabilitation Oriented Categories Based on RSA Disability Codes

Type of Disorder/Disability	RSA Codes	ICD Codes
Quadriplegia	303	344.0
Paralysis - lower limb(s)	363	344.1,344.3
Paralysis - upper limb(s)	343	344.2,344.4
Paralysis - other	393	344.5-344.9
Epilepsy	630	345
Muscular Distrophy	315,335,355 375,395	355
Other	639	320-359 except above
Eye Conditions (disease)		
Diabetic Retinopathy	102,112,122 132,142	362.0
Glaucoma	101,111,121	365
Cataract	100,110,120	366
Blindness or Low Vision		
Both Eyes	109,119,129	369.0-369.4
One Eye	139,149	369.6-369.9
Other	102,112,122 132,142	360--379 except above
Ear Conditions (disease)		
Otitis Media	202,212,222	381-382
Hearing Loss	209,219,229	389
Other	202,212,222	380-389 except above
Diseases of the Circulatory System		
Heart Disease	642,643	
Rheumatic Heart Disease		393-398

APPENDIX C-1 (Continued)

Chart for Conversion of ICD Codes to Rehabilitation Oriented Categories Based on RSA Disability Codes

Type of Disorder/Disability	RSA Codes	ICD Codes
Hypertension & Hypertensive Heart Dis.	644	401-404
Acute Myocardial Infarction		410
Atherosclerotic Heart Dis.		414.0
Other Ischemic Heart Dis.		411-413,414.1-414.9
Congestive Heart Failure		428.0
Other Heart Disease		390-392.0,393 398,402,404, 410-416,420-429 except above
Cerebrovascular Disease		
Cerebral Seizure (Stroke)	312,332,352 372,392,685	436
Other Dis. of Circulatory System		430-438 except above
Diseases of the Respiratory System		
Bronchitis	654	490-491
Emphysema	651	492
Asthma	610	493
Bronchiectasis	653	494
Other Chronic Obstructive Pulmonary Disease	659	495-486
Other Dis. of Respiratory Sys.		
Likely Disabling	659	472.0-472.2,473, 478.3-478.34, 484.1-484.8,497-519.3
Other		460-519 except above

APPENDIX C-1 (Continued)

Chart for Conversion of ICD Codes to Rehabilitation Oriented Categories Based on RSA Disability Codes

Type of Disorder/Disability	RSA Codes	ICD Codes
Diseases of the Digestive System		
Dental		
Likely Disabling	660	520.0-520.2,520.5,521.6,524
Other	660	520-525
Ulcers of Stomach & Small Intestine	661	531-534
Hernia (with Gangrene)	663	550.0,551
Noninfectious Entritis & Colitis	662	555-558
Alcoholic Liver Damage	520,669	571.0-571.3
Other Probable Disabling	669	535,560-560.2,562, 569.1,569.5-569.6, 570,571.4-571.5,572-572.8,579
Other Dis. of Digestive System		520-579 except above
Diseases of Genito-Urinary System		
Renal Failure	671	584-589
Other	670	580-629 except above
Complication of Pregnancy Childbirth and the Puerperium		
Hypertension Complicating Pregnancy	644	642
Other		630-679 except above
Diseases of the Skin & Subcutaneous Tissue	690	680-709
Diseases of Musculoskeletal System and Connective Tissue		

APPENDIX C-1 (Continued)

Chart for Conversion of ICD Codes to Rehabilitation Oriented Categories Based on RSA Disability Codes

Type of Disorder/Disability	RSA Codes	ICD Codes
Osteoarthritis	310,330,350 370,390	715
Arthropathies & Related	310,330,350	710--719 except above
Dorsopathies (Disorders of Back)	399	720-724
Rheumatism Excluding Back	310,330,350 370,390	725-739
Other Diseases of Musculo-Skeletal & Con. Tissue		730-739
Congenital Anomalies		
Nervous System	301,321,341 361,381	
Spina Bifida		741
Hydrocephalus		742.0,742.1,742.3
Other		742 except above
Eye	136,146	106,116,126 743
Ear		206,216,226 744
Cleft Palate-Cleft Lip & Deform. of the Tongue	680,689	749,750.0-750.1
Spinal Deformities	301,321,341 361,381	754.2,756.1
Other Musculoskeletal Deformities	301,321,341 361,381	754-756 except above
Down Syndrome and Other Chromosomal Anomalies		758
Other Congenital Anomalies		740-759 except above

APPENDIX C-1 (Continued)

Chart for Conversion of ICD Codes to Rehabilitation Oriented Categories Based on RSA Disability Codes

Type of Disorder/Disability	RSA Codes	ICD Codes
Certain Conditions Originating in the Perinatal Period		
Low Birthweight		765
Birth Asphyxia & Respiratory Distress		768-769
All Other		760-799
Symptoms, Signs, Ill-defined Conditions	699	780-799
Injury & Poisoning		
Fractures		
Head (skull fractures)	318,338,358 378,398	800-803
Spinal Chord	318,338,358 378,398	805-806
Other Fractures		800-829 except above
Dislocation of Vertabrae	399	839.0-839.21
Sprains, Strains of Back (including neck)	399	846-847
Intracranial Injuries (excluding skull fracture)	399	850-854
Traumatic Amputation of Limbs or Digits	359,379	885-887,895-897
Late Effects of Injuries		905-909
Injury to Nerves & Spinal Column		950-957
Other Injury or Poisoning		800-999 except above

APPENDIX C-2

Percentage Distribution of Diagnoses by Disease Type and Age
IHS Versus U.S. Short Stay Hospitals

Disease Type	Indian Health Service <16	16-34	35-64	>65	U.S. Short Stay Hospitals <16	16-34	35-64	>65
Infectious and Parasitic Diseases	37.29	21.07	24.90	16.74	18.62	20.85	25.07	35.45
Tuberculosis	8.06	13.81	46.77	31.36			44.68	40.43
Neoplasms:	4.46	12.89	49.18	33.46	2.24	6.81	42.23	48.72
Malignant:	2.09	10.40	48.33	39.18	1.72	4.04	38.95	55.29
Endocrine, Nutritional, and Metabolic Diseases:	8.53	11.39	51.19	28.89	5.15	9.59	36.50	48.76
Diabetes Mellitus:	1.00	7.98	60.80	30.21	1.21	7.83	40.26	50.71
Diseases of the Blood and Blood Forming Organs:	17.81	25.10	34.94	22.15	8.38	17.99	27.54	46.09
Anemias	14.63	26.23	34.48	24.66	5.93	18.16	26.48	49.42
Mental Disorders:	3.71	42.84	45.30	8.14	3.42	32.62	40.29	23.67
Psychoses	2.65	42.60	29.95	24.80	1.42	27.29	34.94	36.36
Neurotic Personality Disorders	6.38	53.89	32.60	7.13	3.15	35.91	41.81	19.13
Alcohol Dependence or Psychosis	.53	38.10	56.67	4.70	.61	29.61	59.43	10.35
Drug Dependence or Psychosis	7.16	56.18	26.90	9.76		62.07	29.06	
Mental Retardation	33.33	47.03			16.00	37.33	37.33	9.33
Diseases of the Nervous System:	22.01	20.53	35.00	22.47	54.16	45.84	.00	1.68
Degenerative Conditions of the Nervous System	29.67	18.68	32.15	19.50	7.02	14.75	33.28	44.96
Epilepsy	25.07	30.58	32.18	12.18	16.47	21.76	34.12	27.65
Eye Conditions:	19.33	12.35	33.79	34.53	9.31	9.78	27.82	53.08
Likely Disabling	1.65	4.49	39.83	54.04	1.14	5.03	24.94	68.88
Ear Conditions:	76.53	9.60	10.27	3.60	52.58	10.49	21.12	15.81
Otitis Media	89.48	5.04	4.67	.81	84.08	5.59	7.26	3.07
Hearing Loss	35.37	19.01	25.98	19.64	14.52	16.13	27.42	41.94
Diseases of Circulatory System:	2.33	6.37	48.04	43.26	.71	2.44	31.99	64.85
Diseases of Respiratory System:	45.61	11.25	22.60	20.54	18.56	11.35	26.93	43.16
Chronic Obstructive Pulmonary Diseases:	24.92	9.52	34.49	31.08	9.63	5.84	31.40	53.13
Other Likely Disabling Respiratory Diseases	21.88	13.65	34.31	30.16	6.19	10.01	31.09	52.71

APPENDIX C-2 (Continued)

Percentage Distribution of Diagnoses by Disease Type and Age IHS Versus U.S. Short Stay Hospitals

Disease Type	Indian Health Service				U.S. Short Stay Hospital			
	<16	16-34	35-64	>65	<16	16-34	35-64	>65
Diseases of the Digestive System:	15.54	25.25	42.60	16.60	6.86	15.92	37.86	39.36
Noninfectious Entritis and Colitis	54.38	14.88	18.31	12.43	24.16	21.34	25.77	28.72
Alcoholic Liver Damage		25.06	68.48				70.75	16.33
Other Likely Disabling	6.53	21.38	52.88	19.20	3.39	9.52	39.34	47.75
Diseases of Genito-Urinary System:	7.20	28.81	41.66	22.33	3.05	23.99	38.76	34.20
Renal Failure	2.47	8.34	52.25	36.94	1.58	7.47	31.22	59.73
Diseases of the Skin and Subcutaneous Tissue	21.84	22.49	40.92	14.75	10.62	18.57	35.52	35.28
Diseases of the Musculoskeletal System and Connective Tissue:	7.66	24.53	47.05	20.76	2.82	16.09	43.64	37.45
Arthropathies and Related Disorders:	8.02	22.11	45.31	24.57	3.16	10.53	32.28	54.04
Osteoarthritis			42.39	52.83			24.20	73.81
Dorsopathies (Disords. of Back)	2.42	26.94	54.98	15.66	.40	19.20	57.07	23.33
Rheumatism(Excluding the Back)	9.80	30.29	46.04	13.88	4.35	21.74	50.97	22.94
Congenital Anomalies:	80.62	8.84	8.06	2.48	56.36	14.59	19.20	9.85
Symptoms, Signs, & Ill Defined Conditions	24.88	20.24	35.33	19.56	10.18	14.68	35.31	39.83
Injury and Poisoning:	17.92	49.55	25.69	6.84	11.03	34.24	30.41	24.32
Skull Fracture	14.19	63.37	20.30	2.13	16.11	50.71	25.12	8.06
Spinal Chord Fracture	3.85	52.56	28.21	15.38		36.28	24.78	
Sprains & Strains of Back (Including Neck)	5.40	51.74	37.33	5.52	1.75	39.75	48.50	10.00
Intracranial Injuries (Except Skull Fracture)	26.99	49.39	20.06	3.56	23.05	41.21	21.61	14.12
Trumatic Amputation of Limbs or Digits	25.77	37.42	31.90	4.91		55.17	27.59	
Late Effect of Injuries	9.69	51.42	32.17	6.72	5.22	35.07	40.30	19.40
Injury to Nerves&Spinal Column	16.50	62.83	18.33	2.33	14.08	45.07	35.21	5.63
TOTAL:	19.54	34.98	29.98	15.49	9.01	19.82	31.56	39.61

APPENDIX C-3

Percentage Distribution of Diagnoses by Disease Type and State

	Region 4	Region 5	Region 6		Region 7
	NC	MN	NM	OK	NB
Infectious and Parasitic Diseases	2.56%	3.87%	3.17%	2.95%	2.15%
Tuberculosis			.25%	.15%	
Neoplasms	2.44%	1.70%	1.68%	2.46%	1.05%
Malignant	2.06%	1.42%	1.20%	1.77%	.82%
Endocrine, Nutritional, and Metabolic diseases	12.53%	9.12%	6.74%	8.12%	10.69%
Diabetes Mellitus	8.97%	6.09%	3.79%	4.75%	7.29%
Diseases of the Blood and Blood Forming Organs	2.24%	1.17%	2.21%	2.17%	1.79%
Mental Disorders	6.78%	8.32%	6.86%	3.36%	19.45%
Alcohol/Drug Dependence	2.87%	3.98%	4.25%	1.72%	15.80%
Diseases of the Nervious System	1.65%	.98%	1.38%	.98%	1.31%
Epilepsy			.17%	.13%	
Degenerative Disorders of the Nervous System	.54%	.26%	.39%	.17%	.30%
Eye Conditions	.75%	1.12%	1.48%	.645	1.33%
Cataract			.32%	.09%	
Other Likely Disabling		.28%	.31%	.24%	
Ear Conditions:	1.06%	1.80%	1.86%	.96%	3.33%
Otitis Media	.75%	1.36%	1.53%	.72%	2.75%
Diseases of the Circulatory System	13.03%	14.42%	5.67%	10.67%	9.52%
Diseases of the Respiratory System	7.09%	10.66%	6.64%	5.78%	9.16%
Chronic Obstructive Pulmonary Diseases	2.20%	3.16%	1.24%	1.84%	2.10%
Other Likely Disabling Respiratory Diseases	.98%	.98%	1.05%	.82%	.63%
Diseases of the Disgestive System	7.39%	7.39%	9.06%	8.43%	9.32%
Noninfectious Entritis and Colitis	.94%	.74%	1.15%	.76%	1.44%
Alcoholic Liver Damage	.42%	.40%	.65%	.41%	2.13%
Other Likely Disabling	1.21%	2.01%	1.42%	1.50%	2.36%
Diseases of Genito-Urinary System	7.89%	4.66%	5.92%	6.98%	4.91%
Renal Failure	1.44%	.39%	.75%	.43%	.72%
Complications of Pregnancy, Childbirth and the puerperium	13.10%	8.72%	20.83%	25.24%	3.89%
Hypertension Complicating Pregnancy	.86%	.58%	1.62%	1.17%	
Diseases of the Skin and Subcutaneous Tissue	3.30%	2.35%	2.18%	1.90%	2.95%
Diseases of the Musculoskeletal System and Connective Tissue	2.79%	2.98%	2.12%	2.20%	2.75%

APPENDIX C-3 (Continued)

Percentage Distribution of Diagnoses by Disease Type and State

	Region 4	Region 5	Region 6		Region 7
	NC	MN	NM	OK	NB
Arthropathies, Rheumatism and Related Disorders	1.50%	1.57%	1.23%	1.27%	1.24%
Congenital anomalies	.82%	.56%	1.49%	.95%	.32%
Conditions Originating in the Perinatal Period	2.38%	1.75%	5.17%	6.56%	.88%
Symptoms, Signs, & Ill Defined Conditions	7.51%	8.39%	5.71%	4.50%	6.92%
Injury and Poisoning	4.66%	1.05%	9.83%	5.15%	8.28%
Intracranial Injury (Including Skull Fracture)	.55%	1.06%	.86%	.56%	1.05%
Injury to the Spinal Column, Back, or Nerves		.36%	.35%	.23%	

Percentage Distribution of Diagnosis by Disease Type and State

			Region 8		
	MT	ND	SD	UT	WY
Infectious and Parasitic Diseases	2.96%	2.68%	3.14%	2.80%	2.66%
Tuberculosis	.26%		.30%		
Neoplasms	2.00%	1.80%	1.58%	1.06%	1.12%
Malignant	1.53%	1.48%	1.23%	.54%	.70%
Endocrine, Nutritional, and Metabolic diseases	7.62%	7.54%	7.30%	6.26%	6.31%
Diabetes Mellitus	4.46%	4.86%	4.46%	3.21%	2.74%
Diseases of the Blood and Blood Forming Organs	1.72%	1.25%	1.96%	1.58%	1.66%
Mental Disorders	8.80%	10.65%	7.94%	5.05%	12.59%
Alcohol/Drug Dependence	4.81%	7.38%	4.33%	2.88%	7.96%
Diseases of the Nervous System	1.32%	1.38%	1.27%	1.19%	1.22%
Epilepsy	.15%	.29%	.26%		
Degenerative Disorders of the Nervous System	.32%	.30%	.25%		
Eye Conditions	.94%	.88%	1.05%	1.19%	.62%
Cataract	.17%	.26%	.22%		
Other Likely Disabling	.17%	.12%	.21%		
Ear Conditions	2.18%	1.96%	2.12%	1.95%	2.53%
Otitis Media	1.62%	1.70%	1.79%	1.50%	1.77%

APPENDIX C-3 (Continued)

Percentage Distribution of Diagnosis by Disease Type and State

			Region 8		
	MT	ND	SD	UT	WY
Diseases of the Circulatory System	9.25%	8.43%	7.81%	5.01%	7.14%
Diseases of the Respiratory System	9.53%	11.03%	10.61%	8.50%	6.29%
Chronic Obstructive Pulmonary Diseases	2.82%	2.80%	3.03%	2.08%	1.03%
Other Likely Disabling Respiratory Diseases	1.03%	1.12%	.95%	1.17%	.73%
Diseases of the Disgestive System	8.93%	9.24%	8.31%	11.68%	10.97%
Noninfectuous Entritis and Colitis	1.17%	1.96%	1.82%	.91%	.68%
Alcoholic Liver Damage	.77%	.54%	.56%	.93%	1.18%
Other Likely Disabling					
Diseases of Genito-Urinary System	5.97%	5.21%	5.70%	5.50%	5.05%
Renal Failure	.47%	.38%	.85%	.80%	.28%
Complications of Pregnancy, Child birth and the puerperium	11.82%	11.52%	13.14%	22.93%	14.20%
Hypertension Complicating Pregnancy	.64%	.47%	.53%	1.30%	.50%
Diseases of the Skin and Subcutaneous Tissue	2.61%	2.25%	3.27%	2.17%	1.43%
Diseases of the Musculoskeletal System and Connective Tissue	3.24%	3.16%	2.64%	2.54%	3.48%
Arthropathies, Rheumatism and Related Disorders	1.73%	1.71%	1.57%	1.63%	1.93%
Congenital anomalies	.71%	.70%	.92%	1.67%	.70%
Conditions Originating in the Perinatal Period	1.69%	2.96%	3.44%	3.88%	2.03%
Symptoms, Signs, & Ill Defined Conditions	6.67%	6.58%	6.38%	5.96%	6.54%
Injury and Poisoning	12.04%	10.79%	11.43%	9.08%	13.47%
Intracranial Injury (Including Skull Fracture)	1.57%	1.36%	1.32%	.80%	1.22%
Injury to the Spinal Column, Back, or Nerves	.74%	.49%	.42%		.45%

APPENDIX C-3 (Continued)

Percentage Distribution of Diagnoses by Disease Type and State

		Region 9			Region 10	
	AZ	NV	AK	ID	OR	WA
Infectious and Parasitic Diseases	4.68%	3.47%	2.90%	3.89%	3.99%	2.46%
Tuberculosis	.22%		.30%			
Neoplasms	1.48%	1.54%	3.25%	1.69%	2.11%	2.04%
Malignant	1.11%	.93%	2.62%	1.33%	1.48%	1.39%
Endocrine, Nutritional, and Metabolic diseases	7.43%	10.91%	2.74%	8.00%	8.22%	5.87%
Diabetes Mellitus	4.46%	7.31%	.76%	4.23%	4.92%	2.87%
Diseases of the Blood and Blood Forming Organs	1.82%	1.75%	12.65%	2.10%	1.16%	1.69%
Mental Disorders	5.13%	9.28%	7.38%	8.79%	7.52%	5.95%
Alcohol/Drug Dependence	2.94%	6.13%	3.44%	4.34%	2.92%	2.86%
Diseases of the Nervious System	1.45%	1.09%	1.60%	1.71%	1.37%	1.39%
Epilepsy	.23%		.17%			.36%
Degenerative Disorders of the Nervous System	.38%		.73%	.70%		.37%
Eye Conditions	1.56%	1.48%	1.79%	.68%	.80%	.81%
Cataract	.53%		.56%			
Other Likely Disabling	.24%	.21%				
Ear Conditions	2.23%	1.13%%	4.75%	2.18%	2.05%	1.76%
Otitis Media	1.77%	.75	3.03%	1.41%	1.50%	1.13%
Diseases of the Circulatory System	5.82%	11.78%	6.02%	8.87%	7.83%	10.81%
Diseases of the Respiratory System	7.87%	7.01%	8.21%	7.40%	10.76%	9.76%
Chronic Obstructive Pulmonary Diseases	1.65%	1.66%	2.33%	1.77%	2.64%	2.45%
Other Likely Disabling Respiratory Diseases	1.02%	.82%	1.07%	1.01%	1.27%	1.02%
Diseases of the Digestive System	7.25%	9.57%	7.45%	10.65	%10.21%	10.25%
Noninfectious Entritis and Colitis	.74%	.93%	.65%	.75%	1.65%	1.39%
Alcoholic Liver Damage	.68%	.95%	.17%	1.05%	.78%	.43%
Other Likely Disabling	1.03%	1.81%	1.35%	2.31%	2.05%	2.20%
Diseases of Genito-Urinary System	6.05%	6.03%	5.09%	6.39%	5.45%	6.18%
Renal Failure	.74%	.64%	.16%		.63%	.39%
Complications of Pregnancy, Child birth and the puerperium:	20.58%	11.14%	16.69%	12.46%	13.93%	14.71%
Hypertension Complicating Pregnancy	1.64%	.48%	.82%	.47%		.50%
Diseases of the Skin and Subcutaneous Tissue	2.77%	2.29%	2.01%	2.12%	2.43%	1.79%
Diseases of the Musculoskeletal System and Connective Tissue:	2.29%	3.90%	4.32%	3.16%	4.02%	4.15%
Arthropathies, Rheumatism and Related Disorders	1.36%	2.31%	2.85%	1.75%	2.68%	2.50%
Congenital anomalies	1.33%	.91%	1.40%	.62%	.80%	.43%

APPENDIX C-3 (Continued)

Percentage Distribution of Diagnoses by Disease Type and State

	Region 9		Region 10			
	AZ	NV	AK	ID	OR	WA
Conditions Originating in the Perinatal Period	4.35%	1.32%	3.87%	1.71%	1.33%	1.21%
Symptoms, Signs, & Ill Defined Conditions	5.55%	6.10%	6.07%	5.88%	5.98%	6.45%
Injury and Poisoning:	10.35%	9.30%	11.80%	11.70%	9.91%	12.31%
Intracranial Injury (Including Skull Fracture)	.89%	.93%	1.08%	1.37%	1.20%	1.24%
Injury to the Spinal Column, Back, or Nerves	.34%		.52%	.68%	.59%	.77%

APPENDIX C-4

THE DISABLED INDIAN IN CALIFORNIA

A special analysis of California's Indian population is being undertaken because comparable data from California is not currently available on this state from the Indian Health Service national data bank. This effort includes the identification, retrieval and analysis of alternate sources of data which provide the best, although fragmented, information on the Indian person with disabilities residing in California. The unique historical development of Indian health care programs in California and its limited reporting requirements severely restricted the development of Indian specific data. Thus data from the state of California was not found to be readily available. This section of the report identifies and analyzes data available from secondary sources. It reports the status of the disabled Indian in terms of gender, age, place of residence, and type of disability. Conditions contributing to disabling conditions are discussed, and recommendations are provided.

Background

Although the state of California is cited as having the largest American Indian population in the nation (Office of Technology, 1986; U.S Bureau of the Census, 1980), very little data is available on the health status and disability needs of this population. This lack of data is due to several factors and is based on the unique and historical development of Indian health programs.

In 1955, the Transfer Act (42 U.S.C. 2004a) reassigned the responsibility of Indian medical and health-related services from the Bureau of Indian Affairs (BIA) in the Department of the Interior to the Public Health Service in the U.S. Department of Health, Education and Welfare. Federal responsibility for Indian health care now resides within the Indian Health Service (IHS), a division of the Public Health Service in the U.S. Department of Health and Human Services. Because of a history of bitter experiences with the BIA regarding health care services, California tribes opted via state resolution to discourage Federal continuation of services (with the exception of water and sewage projects) as previously delivered. Health care facilities implemented by the BIA were largely isolated and inaccessable. In the 1950's, California had only two Indian hospitals. These were located in opposite ends of the state and were in isolated and difficult to reach locations. The Indian hospital on the Hoopa reservation in northern California was accessible to only those residents of the far northwest coastal area. Winter storms, frequent road slides and primitive road conditions made transportation to this Indian hospital difficult. The hospital at Fort Yuma was located on the Arizona-California boarder and was accessible only to those residents of the Yuma area. Problems associated with isolation was compounded by the extreme hot and arid climate of the desert. Isolation and limited, difficult transportation was a significant factor in the inability of the Indian clientele to obtain services at these Indian hospitals. The hospital in Hoopa closed down as an Indian hospital in the early 1950's. It continued, however, under the sponsorship of the county as a general hospital. The Yuma hospital changed to an infirmary in the late 1950s. Today, those patients residing on the California/Arizona border receive their hospitalization care at the Phoenix Indian Medical Center.

With the departure of Federal attention to health services in California, the burden of care fell on the State and County Health Department. The health care needs of California Indians were great --too great for the available resources of the state. In 1967, the U.S. Public Health Service provided $245,000 to the State Department of Public Health, Bureau of Maternal and Child Health, for the development of nine rural Indian health centers as pilot projects. These projects were developed to provide direct health care services, as well as outreach and referral services. This support was extended in 1969 for a limited time period.

Legislative efforts to meet California's Indian health care needs culminated in the passage of a bill in 1975 (Senate Bill 52, or the Moscone Bill) to develop an Indian Health Program within the State of California Health Department. This Bill directed the State to maintain a health program for Indians "consisting of studies of health and health services, technical and financial assistance and coordination of similar health programs" (Chronology of California, nd). The Indian Health Service program of the State of California Department of Health Services continues today with an expanded role which includes the direct financial support of many of the Indian health care programs.

Rural Indian health programs continued to exist with minimal funding from various sources, primarily the State and the Public Health Service, for several years. These Indian-managed and administered programs were located in rural areas where significant numbers of Indians lived. Large metropolitan areas in the state began to see a need for health care services for those Indians relocating to urban areas. Urban Indian clinics were developed mainly through the efforts of the Indian people themselves, as were the rural programs. In 1969-70, the California Rural Indian Health Board (CRIHB) and the California Urban Indian Health Council, Inc. (CUIHC) (late '70s) were formed to advocate and assist in the planning for Indian health care services/programs in rural and urban areas, respectively.

When the federal Indian Health Service returned to California in 1976, most of the Indian health programs developed by the State and the Indian people themselves were already in existence. A minimally staffed office, established in Sacramento for years prior to their return, was expanded to a fully designated IHS Area Office in December of 1986. The IHS continued providing the financial support for Indian health care projects, with additional supportive services such as training and workshops for Indian program staff. From these beginnings, Indian projects expanded to 20 current Indian projects and 17 satellite clinics in rural areas, and five urban centers in the major metropolitan areas.

Currently there are no Indian Health Service inpatient facilities in the state. Inpatient and some necessary outpatient services are purchased, on a limited basis, from outside vendors. Eligibility requirements for contract care through the IHS are more restrictive than the requirements for direct services at Indian centers. To be eligible for contract care, the patient must first be eligible for IHS direct care and: (1) reside on a reservation located within a contract health services delivery area as designated by IHS; or (2) reside within such a designated area and be a member of the tribe or tribes located on that reservation or for which the reservation was established, or maintain close economic and social ties with that tribe or tribes; or (3) be an eligible student, transient, or Indian foster child (U.S. Congress, Office of Technology Assessment, 1986).

Limited funds for comprehensive care, however, restrict coverage of care. Priorities are established for services, which depend largely on the severity of the medical problem, the patient's place of residence, and the resources provided through annual appropriations. To a large extent, the majority of health care services are available only at the various Indian-managed and administered centers. Financial assistance for health care services is provided by the federal Indian Health Service, State Department of Health Services, and third party reimbursements. As these Indian community controlled programs grew larger, they began to contract directly with the Indian Health Service under P.L. 93-638, the Indian Health Care Self-Determination Act. This piece of legislation allows for tribes to assume and manage the federal portions of selected health care delivery functions.

This contracting procedure continues with several Indian programs as a means of controlling and administering the health care services to their clientele.

Because California is unique in its delivery of health services to American Indians, data collection requirements and sources of data specific to its Indian population are limited. Its Indian health programs are Indian-managed and administered, as opposed to the traditional Indian Health Service health care delivery system. Data collection requirements are limited and restricted largely to fiscal accountability required by the various funding agencies. Enumeration of patient contact by the provider is the sole source of data for most programs. More detailed information on diagnosis and disabling conditions are not summarized or reported. Although raw data is maintained in client records, the Indian-managed health care programs were not required to report utilization by diagnosis or treatment by the Indian Health Service. Additionally, the lack of equipment and other resources at the Indian programs, such as manpower and computer skills, further hampered the generation of needed data. Sources of data on California's Indian population are restrictive in that they reflect the varied interest of several federal, state, and local agencies. There is no single, comprehensive source of health or disability data on California's Indian population. Existing data are piecemeal and fragmented, and severely underreport Indian health conditions and needs (Crouch, 1987).

Recently, efforts to coordinate data collection between the Indian Health Service, the State of California, and Indian health programs have begun in order to capture a broader range of information regarding Indian health care utilization patterns. This effort, however, is so recent it is not yet fully operative. This report thus had to rely on existing sources of data to analyze the status of the disabled Indian residing in this state. This provided the best, albeit piecemeal, picture of the disabled California Indian.

Socio-demographics

There are approximately 231,700 Indian, Eskimo and Aleuts residing in the state of California (U.S. Bureau of the Census, 1983). This is a little less than 1% of the total population in California. This census count has been a topic of controversy among tribes, Federal, State and local agencies. It is felt that the 1970 and 1980 census undercounted the American Indianpopulation for various reasons. The Office of Technology Assessment (1986) cites two major reasons for the undercount: (1) the intercenal measures of population change are unreliable, and (2) the enumeration techniques used by the U.S. Bureau of the Census are inadequate.

Over 60% of California's Indian population reside in urban areas. Los Angeles County alone has approximately 50,000 Indians residing within its boundaries. The remaining 40% reside in rural areas, primarily on the 85 reservations and rancherias spread throughout the state. Between 1970 and 1980, California's Indian population increased by more than 120%, a significant increase considering the general population in California grew by only 18.6% during this same time period.

The socio-demographics of California's Indian population are reflective of the U.S. Indian population. According to census reports (U.S. Bureau of the Census, 1980), 51% are female and 49% are male. The median age is 25 years; 37% are below the age of 20 year. In 1980, the median income for Indian households in California was reported to be $14,825. The census also reported that 17.7% of the Indian population had incomes below the poverty level. Fifty-three percent of all families in California were headed by women, compared with 14% of all families in the U.S. The unemployment rate for Indians on the reservations/rancherias is estimated to be approximately 50%, a figure comparable to unemployment rates on reservations nationwide (California Ad Hoc Committee, 1987).

In 1980, 76.4% of the total Indian population in California had completed 4 years of high school and some college, compared with 84% for the state as a whole (U.S. Bureau of the Census, 1980). The major industries employing Indians were private companies (28%), local government (4%), self-employed (2%), federal government (2%), and state government (2%).

Although health statistics on California's Indians are virtually non-existent, reports indicate the major health problems in California are similar to those seen by Indians nationwide. In a national report on Indian health care, the U.S. Congress, Office of Technology Assessment (1986) stated:

> The rank order of causes reflected in the mortality statistics is comparable to that of causes of death for Indians in other IHS areas. The leading causes of death among California Indians in 1980 to 1982 were estimated to be, in descending order, diseases of the heart; accidents; malignant neoplasms; cerebrovascular disease; chronic liver disease and cirrhosis; homicide; diabetes mellitus; suicide; pneumonia; chronic pulmonary disease; nephritis, nephrotic syndrome, and nephrosis, certain conditions originating in the perinatal period; atherosclerosis; tuberculosis; and other diseases of arteries, arterioles, and capillaries. These data indicate that Indians in California experience much the same health problems as Indians in other parts of the country.

Environmental concerns particular to California's Indian population was reported by the Indian Health Service Area Office located in Sacramento. Four major issues were identified by the IHS Environmental Health/Engineering Section:

> a. Celtor chemical cleanup - EPA superfund cleanup of a hazardous waste site at Hoopa Reservation involving mine wastes.
>
> b. Alleged PCB contamination of a Chevron site near Santa Barbara where Native American archaeological observers developed rashes. Preliminary results indicated the cause of the rash was from petroleum hydrocarbons associated with the distillation of petroleum.
>
> c. Manufacture of PCP's with disposal of chemical containers on an Indian reservation in Southern California. This "angel dust" was manufactured elsewhere by persons unknown. Disposal of waste containers on Indian land has ceased.
>
> d. Herbicide spraying in Northern California. The IHS has not been heavily involved in this issue. The State of California Department of Health Services, EPA, and local governments have been in the forefront on this (Moore, 1987).

The above environmental issues indicate that reservations in California, as in several other states, are concerned over contamination of their lands leading to possible health hazards. Such conditions as cancer, birth defects, and chronic illnesses are cited by several reports as possible results of toxic contamination of the environment.

Source of Data

Data on the disabled Indian in California was obtained from several sources: the U.S. Bureau of the Census, the State of California Department of Health Services, the Indian Health Service, and rural and urban Indian health care programs. The 1980 Census provided the most comprehensive picture of the American Indian population and their socio-economic status. Data on age distribution, household size and composition, major industries, employment, income levels, and educational attainment were taken from the census reports. Additionally, information on persons with a work disability, public transportation disability and work disability, and institutionalization in mental hospitals, home for the aged, and other institutions is reported.

California's State Department of Health provides services and compensation to its disabled population. The California State Department of Rehabilitation provides vocational rehabilitation services to individuals able and willing to be trained for employment. A registry of all individuals with disabilities over the age of 18 receiving state assistance is maintained. Data are gathered on these individuals by age, gender, race, and place of residence. Disabling conditions are presented by the following major categories: physical, blind/visual, deaf/hearing, psych/neurosis, alcoholism, drug addiction, other mental, and mental retardation. This register is updated each year and contains extensive information on the type and severity of the disability, as well as the rehabilitation services provided. This source of data, however, does not account for the total population of disabled Indian in California. It reports only those individuals eligible and accepted for vocational rehabilitation and habilitation service. It does not report those individuals who did not apply for or who did not accept the services offered.

The California State Department of Developmental Services also maintains statistics on the developmentally handicapped residents of the state. Criteria for service eligibility is that the age of onset occurred before the age of eighteen. Statistics are maintained on each individual until early adulthood (usually until the age of 20). Characteristics of the disabled individual in terms of age, race, gender, and place of residence are maintained. An assessment of the individual in terms of the severity of the disability is reported. The major categories reported by the Department of Developmental Services are: autism, cerebral palsy, epilepsy, and mental retardation.

The California Children Services within the State Department of Health Services provides services to children with disabilities/illness who require specialized care. The Department maintains statistics on the health and disabilities of the youngsters under their care. The age range of the clientele ranges from less than one year old to 20 plus years. Diagnoses are reported by ICD9 codes for all age groups by gender and race.

The State of California Indian Health Service provided not only information on the history and background of the California Indian health care delivery system, but it also acted as facilitator in identifying sources of potential data and assisted in obtaining relevant data from the State Health Department. A meeting was held in the State Program Office of IHS, bringing together staff from CRIHB, CUIHC, and the State to discuss possible sources of existing data from which information on disabilities among Indians could be obtained.

The federal Indian Health Service California Area Office, located in the Capitol city of Sacramento, serves approximately 73,300 of California's 231,700 Indians (U.S. Congress, Office of Technology Assessment, 1986). Data obtained from this program office included data on the names and location of rural and urban programs, and information on environmental issues currently of concern on or near Indian reservations.

As stated earlier, data on health status and disabling conditions of Indians are not available from the Indian Health Service in California. This is primarily because the IHS has not required the various clinics to report utilization of health services in a manner consistent with all other Indian health facilities in the nation. Thus, this sources was not available to us from which to draw on to identify the extent and status of handicapping problem.

Four Indian health care programs, two urban and two rural, were selected for analysis of Indian utilization of health services. These centers either had a computerized database for clients by health conditions identified by ICD9 codes, were in the process of developing such a computerized retrieval system, or were able to provide some data, hand tallied by staff, on Indian client utilization of their facility by select condition.

Data from these Indian centers provide an indication of the types of health problem/disabling condition presented by Indian patients in rural settings and in urban areas. The two rural clinics are: the Trinidad Clinic, located in the northwestern portion of the state, is a rural Indian health clinic serving Indians from the counties of Humboldt, Del Norte, and Trinidad, and the Shasta-Trinity Clinic located 90 miles north of Sacramento. The two urban sites examined were San Diego, located at the southern part of the state, and Sacramento, located in central California. Again, these programs were chosen for data retrieval because of the availability of the data from clinic files.

All Tables referenced in this report appear at the end of the report.

Method/Problem of Analysis

Because of limited data sources available on California's disabled Indian population, the method of analysis consisted of piecing the fragmented information together in an attempt to obtain a clearer picture of the problems and needs of this special population group. This resulted in some under- and over-reporting of the disabilities seen. Because not all disabled Indians seek services or compensation for their disabilities from the State, underreporting of this cohort is evident. On the other hand, the inability to identify unique cases among the various data sources resulted in possible multiple reporting of individuals. In addition, individuals holding multiple disabilities may possibly be counted in each category ofdisability, thus being overreported.

An attempt was made to identify the prevalence of disability by type, utilizing select ICD9 codes used for diagnoses. Reliable prevalence data, however, was not available from any source. Data presented in this section should be viewed as incomplete and rough data providing a general overview of the health conditions, services, and disabling conditions seen by several groups of Indians in the state. Data from the rural and urban Indian centers give an idea of the types of disabling conditions seen on an outpatient basis at these Indian centers. These data were tallied by the Indian program staff and are reported by select ICD9 codes. Data from the State of California provided information on the extent of the developmentally and physically disabled by county of residence.

The State Children Services Division reported services provided to children by diagnostic categories, which indicates the type of health problem occuring among this age group. Together, these data indicate the types of problems being seen in possible, given the limited data and time frame underwhich this study was conducted, these data do give some useful information on the disabled Indian in California. Additional research, however, is needed in order to obtain a clearer picture of the prevalence of disability by specific category.

Identification of disabilities

The developmentally disabled. Services provided to the developmentally disabled are coordinated through the State's Department of Developmental Services. The State of California reported a clientele population of 68,700 in 1986, 382 of whom were American Indians (State of California, 1986). Thus .17% of the total California Indian population was served by this Department, compared to .3% of the total state population served. This indicates that Indians are underrepresented, possibility because of identification or service problems, in the State's program.

Special services provided by the Department of Developmental Service are implemented through contractual arrangements with vendorized service providers, generic agencies, and developmental centers. These services consist primarily of educational programs, with an emphasis on vocational and pre-vocational training. Most programs contracted by the state serve the function of habilitating and rehabilitating individuals having a developmental disability. Workshops and training sessions are coordinated to serve the trainable as well as the profoundly mentally retarded individual. Some special educational sessions are arranged within the school districts.

The statistics obtained from the State of California Department of Developmental Services reflect only those individuals meeting eligibility requirements for State services. These requirements are: "any California resident who is believed to have a developmental disability or is believed to have a substantial risk of parenting a developmentally disabled infant" (Californians With Developmental Disabilities, 1986). Those individuals not meeting these requirements are referred to other agencies when applicable. Additionally, those individuals not seeking services are not entered into the system and thus are not counted in the enumeration of the disabled in California. This may have resulted in underreporting of the developmentally disabled Indian in California.

Appendix C-4 Table 1 shows the major disabling conditions seen among this population group as reported by the State. Forty-eight percent of the developmentally disabled Indian population are labeled mentally retarded only, compared to 52.6% for the total California population. Eighteen percent of Indians have epilepsy, compared to 15.8 for the total state population; 12% Indians have cerebal palsy, compared to the states total of 11.8; 12% Indian and are afflicted with a combination of cerebal palsy and autism, 10.2% of non-Indians are reported with this affliction. Over 2% Indian and 3.7% non-Indian have autism; and the remainder have a combination of cerebal palsy, epilepsy and autism. In terms of the percentage reported by category of developmental disability, the Indian population differs little, proportionally, from the state's total population (White, 1987).

Of the population of developmentally disabled Indians, 48% are female and 52% are male. Forty-three percent are between the ages of 22 - 40 years; 26% fall in the 5 - 18 year old age group; 15% are over the age of 41 years; 9% are between the ages of 19-21; and 7% are aged 4 or below. The frequent inability to correctly diagnosis the developmentally disabled until matriculation into school may account for the low enumeration among the aged 4 and younger.

Indians afflicted with developmental disabilities reside in 49 counties in the state. Los Angeles County is reported to have the largest number (89), or 23%, of developmentally disabled Indians in the state. To have a large number of disabled Indians residing in this county is not surprising as Los Angeles has the largest American Indian residents. Furthermore, Los Angeles County accounts for 1/3 of the total population in the state, thus it is safe to assume that one out of three developmentally disabled individuals would be from this county. Other counties with large numbers of these individuals are San Diego (38), a county at the southern most part of the state; Alameda (20), located in the San Francisco Bay Area; and Orange County (18) a close neighbor of Los Angeles County.

The concentration of developmentally disabled Indians in urban counties, but not in rural counties with large Indian populations, may be a reflection of a lack of access, or a decision on part of the family not to seek services. These reasons may explain the low numbers of reported cases of Indian disabilities in rural counties.

Physical disabilities. The State of California reported that 633 American Indians received compensation/services for their physical disability from the Vocational Rehabilitation Program. This figure accounts for approximately .29% of the total Indian population in the state, and .5% of the total physically disabled population served by the state. If we consider that .5% of the state's total population is served by the Vocational Rehabilitation Program, and only .29% of the total Indian population is served, we can see that the Indian population is underrepresented in this program.

Appendix C-4 Table 2 illustrates the physical disabilities categories reported by the state for Indians in California. The major disability seen among Indians fall within two categories: 42.3% are physical disabilities and 28% are due to alcoholism. The remaining disabled categories are drug addiction (8.7%); psych/neurosis (7.6%); mental retardation (3.5%); other visual (2.7%); blind (1.9%); deaf (1.9%); other hearing (1.6%); and other mental (1.6%).

Of the physically disabled Indians reported by the Vocational Rehabilitation Program as their clientele, approximately 37% are female and 63% are male. This group is older; they are generally over the age of 16 years. Appendix C-4 Table 3 shows the population distribution: most are between the ages of 21-40 (61.3%), with 19.4 between the ages of 41-50; 11.7% aged 20 or less; and 7.6% aged 51 and over. This age distribution is reflective of the services and eligibility requirements for vocational/rehabilitation services (ie. those in the labor force).

As with the developmentally disabled, the majority of the physically disabled Indians reside in Los Angeles County (29.4%). San Joaquin County is reported to be the next highest county of physically disabled Indians (4.4%), followed by Alameda County (4.1%) in the San Francisco Bay Area. The rest of the cases are almost evenly distributed among the rest of the counties in the state.

A proportion of the mentally ill and disabled Indian population in California reside in mental institutions, homes for the aged, or other institutions. The 1980 U.S. Census reports that .14% of the Indian population reside in mental hospitals and .24% are reported to be residing in other types of institutions (the specific type not identified). Compared to the total state population, these figures are somewhat high. Only .09% and .15 of the total state's population reside in mental institutions and other institutions respectively. However, a greater percent of the state's total population live in a home for the aged: .56% compared to .19% for the Indian population. The low percentage reported for the Indian population may be due to the traditional Indian family unit. Whereas nuclear family units are the norm for many non-Indian families, Indian families are traditionally made up of extended family members. Thus we may expect to see less elderly Indians being institutionalized in homes for the aged.

Disabling Conditions. Data on health conditions which may have a high probability of being or progressing to a disabling condition were obtained from two sources:

rural/urban Indian health care programs and the State of California Children Services. Three Indian health care programs provided data on Indian utilization by select ICD9 diagnostic categories. Data from these Indian programs reflect the major health problems for disabling conditions presented by California's Indian population at these outpatient facilities. Not all health conditions are reported, nor are all clients reported. The analysis only considered those Indian clients presenting with a condition likely to result in a disability.

From the various clinics, (rural, urban, and outreach) and Indian Alcoholism Programs in California, several health centers were approached and requested to participate in this study. Those who responded had access to existing clinical data via newly installed computer systems, or were otherwise able to coordinate staff efforts to provide necessary data. Because very few of these programs were able to provide data on Indian utilization by diagnosis, only those centers contacted and responding to our request for data by select ICD9 codes were included in the analysis (Appendix C-4 Table 4).

Hypertension, the major condition seen at these centers, is a disease which can result in a disabling condition, such as stroke or cardio-vascular disease, depending on the severity and the length of time an individual has the disease. Of the individuals presenting with hypertension, most were female. The male to female ratio was 0.8, indicating that more females presented with this disorder.

The second most frequent disorder seen at these clinic was diabetes mellitus. The male to female ratio was 0.6. Diabetes mellitus is a chronic condition which untreated may lead to coma and death. Secondary complications include severely disabling conditions such as blindness, amputations, vascular disease, stroke, and heart attacks. More than 50% of all amputations performed in the United States are due to the effects of diabetes.

Together, hypertensive disorders and diabetes mellitus accounted for almost 50% of the patient population seen at this clinic. No other condition was reported as frequently among Indian clients as these two jointly.

Another area of concern is that of mental disorders, reported in significant numbers at the Trinidad Indian Center (24% of all disability disorders), more than twice that seen at other Indian centers investigated. The decline of jobs for Indians due to the failing timber industry, isolation, and high seasonal rainfall may be contributing factors to this problems. Additionally, mental disorders is noted to be of significant concern among Indian groups across the nation, further supporting the assertion that California's Indian health problems are reflective of Indians nationwide.

Individually, the Indian centers differed slightly in the major disabling conditions seen at their centers. The first center investigated, the Shasta-Trinity Indian Health Center, is located in Anderson, California and has a IHS service population of 2,825. The center is a comprehensive health provider (medical/dental/outreach) serving Indians from the northern section of the state in several counties.

The major disorder reported at this center was hypertension disease, seen among 27.8% of the Indian patients. Proportionally, this is the largest percentage for outpatient visits for this condition of the four clinics analyzed. The second most frequent disorder seen was diabetes mellitus. More than 22% of the Indian patients seen during the reported time frame came for diabetes care. The male to female ratio was 0.6.

The third reason for outpatient care at the Shasta-Trinity was reported to be for other musculoskeletal conditions. This condition was seen in 12.9% of clients. Other reported conditions seen include the following: neuroses (7.4%); all other respiratory conditions (5.6%); other bone and joint disorders (5.6%); alcoholism (3.7%); chronic bronchitis (3.7%); osteoarthritis (3.7%); epilepsy and convulsions (1.6%); malignant neoplasm (0.9%); other diseases of the nervous system (0.9%); chronic rheumatic fever (0.9%); cerebrovascular disorders (0.9%); rheumatoid arthritis (09.%); and disorders of the spine (0.9%).

The Trinidad clinic is located in the northern-most section of the state and has a service population of approximately 1,000. Indians from the counties of Humboldt, Del Norte and Trindad receive comprehensive health services from this clinic. Appendix C-4 Table 4 indicates that the most frequent cause of visits among the disabling conditions category was for hypertension. This disorder accounts for over 31% of the visits, higher than that reported by the other three centers. The second major reason was reported to be for mental disorders. This category accounted for 24% of the visits, more than twice those reported by the other centers. This may be attributed to the loss of jobs in the forest industry in the Pacific Northwest. The third cause of outpatient visits in this analysis was due to bronchitis, which is reasonably explained by the environment:, characterized as having tsevere seasonal rainfall.

The last clinic analyzed, the San Diego American Health Center, is located in the southern-most part of the state. As a rural clinic, utilization of services at the San Diego center reflects those needs of an urban population. Such problems as drug abuse, disorders of the spine, and a high incidence of alcohol abuse were evident.

The primary reason for outpatient visits by Indian client was for hypertension (25.8%). As stated earlier, this is not significantly different from the percents reported by the other centers. The second leading reason for outpatient visits was for arthritis (15.1%). No other health center reported this condition, other than Trinidad which reported that 2.7% of their clientele were seen for this condition. And the third largest utilization category reported was for alcohol abuse/dependency (14.6%). This is an extremely high reporting category, especially in comparison with the other centers. Again, as a large urban center, having a unique clientele reflective of the needs of a particular group, the location of this Indian center may account for this observation.

An analysis of the data presented by the four Indian centers thus far reflect a trend towards the increase of certain chronic conditions among Indian patients. Hypertension and diabetes mellitus (Type II) were seen among the vast majority (approximately 50%) of all Indian clients. Secondary complications of both disorders have a high probability of resulting in disabling conditions. Thus these conditions are of significant concern. These conditions may indicate a more serious disability problem among the Indian population not yet identified.

Mental disorders and alcoholism, although reported in differing order of frequency at the centers, was seen to be significant at two of the four centers. The San Diego center reported a significantly higher case load of client utilization due to alcohol compared to all other centers; and the Trinidad center reported an overwhelmingly high percent of mental disorders as primary diagnosis at their health center. This indicates a continuing concern for these problems.

The lack of data on the prevalence of specific disabilities among California's Indians preclude concrete statements regarding the extent and type of disability in this population. However, these data presented above do indicate that Indians seen at these Indian Health Centers present with much the same health problems as Indians nation-wide.

The last data source to be analyzed was the State of California Children Services. Health and welfare services are provided to children in need of care in California. This department reported serving 0.8% of the total population in California under the age of 18 years in fiscal year 1982-83. Further, it reported serving 0.2% of the total Indian population. Appendix C-4 Table 5 indicates that the major condition seen among Indian children receiving services is congenital anomalies (20.3%). The second most frequent condition seen was disorders of the nervous system and sense organs (16.2%), and the third was reported to be certain perinatal conditions (13.2%).

Eighty-two out of 674, or 13% were from Los Angeles. The second highest county of reported cases came from Humboldt County with 67 cases or 10.7% of the total Indian cases. Although previous discussions explained the high incidences of disabilities among Indians in Los Angeles County (i.e. largest Indian population and a major urban area providing special services), the explanation for Humboldt County having the second highest reported cases served by Children Services is not yet determined. Humboldt County is a rural northern county near the Hoopa Reservation. Further examination of this finding is needed.

Results

It is quite difficult to make concrete statements about these data because they are so incomplete. What was obtained, however, indicates that the disabled Indian population either does not use existing support services, or finds it necessary to move to the city to obtain better access to them. Indians are severely underrepresented in the clientele of the disability service programs operated via the State of California. Regardless, existing data point to the fact that the disabled Indian mirrors the total disabled population in California in terms of category of disability and reported characteristic of this specific population. There are, however, indications that the Indian in California may suffer from mental and emotional problems in greater magnitude that the state's general population. Census data on institutional confinement report greater confinement of Indians in mental and other institutions than the state as a whole. Additionally, health problems such as alcoholism consituted a major category for service needs by the State Rehabilitation Program and by San Diego American Indian Health Center.

The Indian in California does not seem to be significantly different from the total Indian disabled population in the U. S. in terms of health problems. The concern is directed at the lack of accurate data on the prevalence by type of disablility among this group. Given such data, access and utilization of services can then be more adequately discussed.

Further research is needed in California on the prevalence and types of disabilities among the Indian population . The current lack of data on health conditions and overall status of the Indian population will soon be resolved with the development of a computerized database system being implemented at the various Indian health care programs. It is estimated that data on health conditions and utilization of services will be more easily accessed in the future.

Data, however, on disabilities among California's Indians may remain inaccessible without further research. A well designed survey is needed to identify the disabled Indian in California, in order for services and appropriate intevention strategies to be designed and implemented.

Although there exists limited data pertaining to the disabled Indian in California, indications from secondary sources clearly point to health problems associated with disabling conditions. Indian health care programs report high utilization of their services for conditions which have a high probability of leading to a disabling condition. Two conditions,hypertension and diabetes, are also reported high among the total population of Indians in the United States. Alcoholism and mental conditions was also noted to be a condition requiring rehabilition services.

The disabled Indian is severely underrepresented in State programs designed for the habilitation and rehabilitation of individuals with a handicapping condition. However, they reflect the same problems, proportionally, as seen among the general population in California. The leading causes of death among the Indian population is similar to those, in order of cause, of Indians nation-wide. Additionally, problems such as alcoholism and mental illness are identified as leading causes of outpatient care which are also reported as serious problems by the Indian Health Service for Indians in other states. From these findings, we conclude that the health and disabling conditions of California's Indians are not significally different from other Indians across the nation. What is needed, however, is further research to document the prevalence of disabling conditions by type in order to meet the needs of this population.

Appendix C-4 Table 1

Distribution of Indian and Total State Clients Reporting Developmental Disabilities in California by Select Categories, 1986

Category	Indian Percent	Total CA Percent
Mental Retardation	48.0	52.6
Epilepsy	18.3	15.8
Cerebal Palsy	12.0	11.8
Cerebal Palsy and Autism	12.0	10.2
Autism	2.1	3.7
Cerebal Palsy/Epilepsy/Autism	1.8	2.4
Not Reported/other/unknown	5.8	3.5
TOTAL	100.0	100.0

SOURCE: White, J., Chief, Data-Based Planning Section, California State Department of Developmental Services, 1987

Appendix C-4 Table 2

Distribution of Disabled Indian State Rehabilitation Clients by Select Condition, 1986

Physical Disability	Frequency	Percent
Physical	268	42.4
Alcohlism	178	28.2
Drug Addiction	55	8.7
Psycho/neurosis	48	7.6
Mental Retardation	22	3.4
Other Visual	17	2.7
Blind	12	1.9
Deaf	12	1.9
Other Hearing	10	1.6
Other Mental	10	1.6
TOTAL	632	100

SOURCE: California State Department of Rehabilitation, 1987.

Appendix C-4 Table 3

Distribution of Disabled Indian State Rehabilitation Clients by Age, 1985-86

Age	Frequency	Percent	Cumulative Frequency	Cumulative Percent
20 and under	74	11.7	74	11.7
21-30	190	30.0	264	41.7
31-40	198	31.3	462	73.0
41-50	123	19.4	585	92.4
51 and over	48	7.6	632	100.0

SOURCE: California State Department of Rehabilitation, 1987

Appendix C-4 Table 4

Distribution of Clients by Select Disabling Condition for Shasta-Trinity, Trinidad, Sacramento, and the Trinidad Indian Health Center, 1986

Disorder	Shasta-* Trinity Percent	Trinidad** Percent	Sacramento* Urban Percent	San Diego* Percent
Hypertension	27.8	31.1	25.9	25.8
Diabetes	22.2	5.6	20.4	9.1
Other msclskltl	12.9	N/A	7.4	N/A
Bronchitis	3.7	11.8	1.0	2.0
Mental Dis/Neuroses	7.4	24.0	9.2	8.1
Other Bone/Joint	5.6	9.7	1.9	N/A
Rheumatoid Arthritis	0.9	N/A	3.7	N/A
Alcoholism	3.7	N/A	1.9	14.6
Epilepsy/Convulsions	1.6	N/A	N/A	1.5
Malignant Neoplasms	0.9	0.5	N/A	N/A
Dx of Nervous Sys	0.9	N/A	1.9	N/A
Rheumatic Fever	0.9	N/A	N/A	0.5
Cerebrovascular	0.9	0.2	N/A	N/A
All other respiratory	5.6	N/A	5.5	N/A
Osteoarthritis	3.7	N/A	1.9	N/A
Disorders of Spine	0.9	N/A	5.5	1.5
Drug Abuse	N/A	N/A	5.5	9.1
Down Syndrome	N/A	N/A	N/A	1.0
Diabetic Rtnopthy	N/A	0.5	N/A	N/A
Chronic Airway Obs.	N/A	0.7	N/A	N/A
Low Back Pain	N/A	4.9	N/A	N/A
Nephritis	N/A	1.6	N/A	N/A
Arthritis	N/A	2.7	N/A	15.2
Asthma	N/A	6.7	N/A	N/A
Deformities of Hip	N/A	0.5	N/A	N/A
Hepatitis	N/A	2.0	N/A	N/A
Hearing Loss	N/A	2.5	N/A	N/A
Cardiovascular	N/A	6.6	N/A	N/A
Total	99.6	91.7	88.4	111.6

*Reflects 2 months of data
**Reflects 12 months of data
Note: Totals do not include small numbers in categories not shown

SOURCE: California Rural Indian Health Board/California Urban Indian Health Center, 1987.

Appendix C-4 Table 5

Distribution of Indian Clients Receiving Services by Disabling Condition, Childrens Services, 1986

Condition	Frequency	Percent
Congenital anomalies	154	20.3
Nervous system and sense organs	123	16.2
Certain perinatal conditions	100	13.2
"A" codes	91	2.0
Injury and poisoning	75	9.9
Digestive system	60	7.9
Musculoskel. and connective tissue	48	6.3
All other diagnoses	33	4.4
Endocr, nutri, metabol, immun	15	2.0
Benign and unspec neoplasms	12	1.6
Circulatory system	11	1.5
Genitourinary system	9	1.2
Malignant neoplasms	8	1.0
Blood and blood organs	5	0.7
"V" codes	5	0.7
Infective and Parasitic	3	0.4
Respiratory system	3	0.4
Skin and subcutaneous tissue	2	0.3
Total	757	100.0

SOURCE: California State Childrens Services, 1987.

Appendix C-5

Navajo Indian Health Service
Pediatric Handicap Register, 1987

Rank Order	Condition	Total Number on Register	Male/Female Ratio
1	Developmental delay	554	2.3
2	Seizure disorder	276	1.3
3	Language/speech	189	1.5
4	Meningitis	180	1.4
5	Prematurity	178	1.7
6	Cerbral palsy	171	1.2
7	Mental retardation	137	1.3
8	FAS/FAE	135	1.3
9	Spastic quadraplegia	104	1.4
10	Failure to thrive	71	2.4
11	Spastic hemiplegia	69	1.3
12	Congenital dislocated hip	67	0.4
13	Hypotonicity	66	1.9
14	Congenital anomalies	59	1.8
15	Down's Syndrome	53	1.8
16	Dysmorphic	50	1.5
17	Hearing loss/impaired	45	0.9
18	Hydrocephaly	45	1.0
19	Cleft lip/palate	44	1.3
20	Microcephaly	41	1.6
21	Congenital heart disease	28	1.2
22	Blindness/visual impairment	27	0.9
23	Psychiatric/behavioral problems	26	0.9
24	Misc. neuromuscular disorders	13	0.4
25	Trauma/accidents	4	1.0
26	Pulmonary disorders	4	3.0

Source: Navajo Area Indian Health Service, 1987

Appendix C-6

Billings Area Indian Health Service
Pediatric Handicap Register, 1987

1987

Rank Order	Condition	Total Number on Register	Male/Female Ratio
1	Seizure disorders	109	1.5
2	Pulmonary disorders	78	0.8
3	Developmental delay	70	1.3
4	Language & speech delay	67	1.6
5	Prematurity	47	0.8
6	FAS/FAE	46	0.6
7	Cleft lip/palate	43	2.3
8	Congenital anomalies	39	0.9
9	Orthopedic disorders	33	0.7
10	Mental retardation	32	1.0
11	Deaf or hearing loss	29	1.4
12	Psychiatric problems	18	1.5
13	Congenital heart dis.	18	1.0
14	Visual Impairment	17	0.8
15	Cerebral palsy	17	0.8
16	Endocrine disorders	13	1.6
17	Meningitis/encephalitis	12	1.0
18	Misc. neuromusc. dis.	11	0.8
19	Hydrocephalus	7	6.0
20	Trauma/accidents	6	1.0
21	Down Syndrome	6	1.0
22	Meningomyelocele	3	2.0
23	Cancer/tumors (mal.)	3	2.0

SOURCE: Billings Area Indian Health Service, 1987

Appendix C-7

Alaska Native Health Service
Pediatric Handicap Register

1987

Rank Order	Condition	Total Number Register	Male/Female Ratio
1	Prematurity	293	1.3
2	Seizure disorder	287	1.5
3	Congenital heart dis.	256	1.1
4	Mental retardation	255	1.4
5	Misc. neuromusc. dis.	246	1.2
6	Orthopedic disorders	196	1.3
7	Meningitis	187	1.2
8	Pulmonary disorders	182	2.1
9	Psychiatric problems	147	1.8
10	Cerebral palsy	142	1.3
11	Failure to thrive	111	1.8
12	Congenital anomalies	97	0.9
13	Trauma/accidents	89	1.9
14	Blindness/visual impair./ eye disorder	87	1.2
15	Language/speech delay	66	1.4
16	Deaf/hearing loss	57	1.0
17	Endocrine disorder	53	0.7
18	Fetal alcohol syndrome	46	1.4
19	Developmental delay	43	1.4
20	Cancer/tumors	43	1.4
21	Hydrocephalus	33	1.2
22	Down Syndrome	31	1.6
23	Cleft palate/cleft lip	30	1.0
24	Encephalitis	12	1.0
25	Meningomyelocele	8	1.7

SOURCE: Alaska Native Medical Center, Pediatric Department, 1987

Appendix C-8

Southwest Alaska Native Children Frequency and Rate per 1,000 population by Health Problem, 1987

Condition	Number	Rate/1000 pop.
Heart Problems	72	136.0
Bronchiectasis	18	34.0
Mental Retardation	16	30.0
Speech Impairments	4	7.5
Deafness	3	5.7
Hip Dysplasia	2	3.8
Blindness	2	3.8
Organic Brain Syndromes	2	3.8
Other	5	---

Source: Centers for Disease Control, 1987.

APPENDIX D-1

Unemployment Rates of American Indians Compared to the Total U.S. Civilian Labor Force by State

REGION I

Maine

The 1980 Census showed that there were approximately 1,124,660 persons living in Maine which ranks at 38th in size in the nation. There were 4,087 American Indians living in Maine which ranks 43rd in the nation. There were approximately 2,951 American Indians living on and adjacent to reservations in Maine (BIA, 1987) of which 728 individuals 16 years and older were employed. There were 454 persons unemployed resulting in an unemployment rate of 38%, three percentage points lower than the average unemployment rate for American Indians in the 28 targeted states and nearly 33% higher than the unemployment rates in Maine for civilian workers in 1986. Unemployment rates based upon 1980 U.S. Census figures for Maine were 28.1% for American Indians living on reservations, 16.6% for all American Indians, and 7.6% for the total state population.

REGION II

New York

There were 17,557,288 residents in New York in 1980 which is a rank of two in size among the among the 50 states. There were 38,732 American Indians living in New York which is a rank of 11th for the nation. In 1986, there were 12,314 American Indians living on and adjacent to reservations of which 2,501 aged 16 and over were employed. There were 2600 persons unemployed resulting in an unemployment rate of 51%, 10 percentage points higher than the average unemployment rate for American Indians in the 28 targeted states and which is nearly 45% higher than the unemployment rate for civilian workers in New York in 1986. Unemployment rates for New York based upon 1980 U.S. Census figures were 30.6% for American Indians living on reservations, 15.7% for all Indians, and 7.1% for the total state population. Three of nine reservations were not included in the figures for American Indians living on reservations because of small numbers identified by the U.S. Census.

REGION IV

Florida

The 1980 Census showed that there were approximately 9,739,992 persons living in Florida which results in a national rank of 7th. There were 19,316 American Indians in Florida which ranks the state 17th. There were 2,025 Indians living on and adjacent to reservations in Florida (BIA, 1987) of which 671 persons 16 years and older were employed. There were 245 individuals unemployed resulting in an unemployment rate of 27%. This figure is 14% lower than the 28 state average for American Indians and 4% lower than the Region IV average unemployment rate. There was a 21% difference between unemployed American Indians and unemployed civilian workers in Florida during 1986. Unemployment rates for Florida based upon 1980 U.S. Census figures were 17.9% for American Indians living on reservations, 10.3% for all Indians, and 5.1% for the total state population.

Mississippi

Mississippi ranked 31st in size in the nation with 2,520,638 residents in 1980. The state ranked 38th in the nation with an American Indian population of 6,180. In 1986, there were 4,832 Indians living on or adjacent to reservations and 1,893 persons 16 and over were employed. There were 670 individuals unemployed resulting in a 26% unemployment rate. This rate is 15% lower than the unemployment rate for American Indians in the 28 targeted states, 5% lower than the rate for Region IV, and 14% higher than the civilian unemployment rate for Mississippi in 1986. Unemployment rates for Mississippi based upon 1980 U.S. Cenus figures were 18.1% for American Indians living on reservations, 10.7% for all Indians in the state, and 7.1% for the total state population.

North Carolina

There were 5,874,429 persons living in North Carolina in 1980 which ranks the state 10th in size in the nation. North Carolina ranked 5th in the number of American Indians with 64,635. In 1986, there were 6,110 American Indians living on and adjacent to reservations of which 1,085 persons 16 and over were employed. There were 710 unemployed persons resulting in a 40% unemployment rate. This rate is the highest for the targeted states in Region IV, close to the average unemployment rate for American Indians in the 28 targeted states and 33% higher than the total civilian unemployment in North Carolina for 1986. Unemployment rates for North Carolina based upon 1980 U.S. Census figures were 21.1% for Indians living on reservations, 9.5% for all Indians in the state and 5.1% for the total population.

REGION V

Michigan

In 1980, Michigan ranked 8th in size in the United States with 9,258,344 residents. Michigan ranked 10th among the states with an American Indian population of 40,038. In 1986, over one fourth of the American Indians living in Michigan lived on and adjacent to reservations (10,155). Of those, 2,066 were employed and 2,407 were unemployed resulting in an unemployment rate of 54%. This rate is second highest for the targeted states in Region V, 13% higher than the unemployment rate for American Indians in the 28 targeted states and six times higher than the unemployment rate for the total civilian labor force in Michigan for 1986. The 1980 U.S. Census showed unemployment at 32.4% for Indians on reservations in Michigan, 21.5% for all Indians in the state and 11% for the total state population. Three of seven reservations were not included in the unemployment figures for Indians on reservations because of small numbers identified in the U.S. Census.

Minnesota

Minnesota had 4,077,148 residents in 1980 which represented a rank of 21st in size for the nation. There were 35,026 American Indians living in Minnesota ranking the state 13th in the nation. Over half (18,288) of the Indians lived on and adjacent to reservations in 1986. Of these persons, 2,698 were employed and 3,993 were unemployed resulting in a unemployment rate of 60%. Minnesota had the highest unemployment rate in the targeted states in Region V, and was 19% above the rate for American Indians in the targeted 28 states. The unemployment rate for American Indians on or near reservations was 10 times higher than the rate for the total civilian workers in Minnesota during 1986. The 1980 U.S. Census estimates of unemployment for Indians living on reservations in the state was 33.9%, for all Indians Minnesota it was 20.5% and the total population unemployment was 5.4%. Two of 12 reservations were not included in the unemployment figures for Indians on reservations because of small numbers identified in the U.S. Census.

Wisconsin

Wisconsin had 4,705,335 residents in 1980 ranking the state at 16th in the nation. The state is ranked 14th in the nation in relation to total American Indian residents with 29,497. Over two thirds (20,502) of the Indian population lived on and adjacent to reservations in 1986. Of those persons, 4,531 were employed and 2,840 were unemployed resulting in an unemployment rate of 39%. This rate is the lowest of the targeted states in Region V and 2% lower than the average unemployment rate for American Indians in the 28 targeted states. The rate is over 5 times the unemployment rate for the total civilian workers in Wisconsin during 1986. The unemployment rates for Wisconsin, based upon the 1980 U.S. Census were 37.5% of Indians living on reservations, 16.1% for all Indians in the state, and 6.6% for the total state population.

REGION VI

Louisiana

Louisana ranks 19th in size among the states with a population of 4,203,972 residents. Of this number, 12064 were American Indian and ranks the state 25 nationally in this respect. Louisiana had an unemployment rate of 13% for the total poplulation and a rate of 41% for the Indian Poplulation. This rate for American Indians is 3 times higher than for the total state rate and ranks as the highest of any state within Region VI. The targeted states in Region VI as a whole have an unemployment rate of 29%. The 1980 U.S. Census estimates of unemployment were 11.1% for Indians living on reservations, 9.1% for all Indians in the state and 6.0% for the total population. One of two reservations was not included in the unemployment figures for Indians on reservations because of the small numbers identified in the U.S. Census.

New Mexico

New Mexico had a total population of 1,299,968, which ranks the state 37th nationally. It also has an American Indian population of 104,777 which ranks 4th nationally in total American Indian population. New Mexico's American Indian population also represents 8% of the total state population. New Mexico residents as a whole had an unemployment rate of 9.2% while the American Indian population experienced a rate of 28%. This rate is 3 times higher than the total state rate. The unemployment rates for New Mexico based upon the 1980 U.S. Census were 21.5% for Indians living on reservations, 14.6% for all Indians in the state and 7.1% for the total state population. One of 26 reservations is not included in the unemployment figures for Indians on reservation because of the small numbers identified in the U.S. Census.

Oklahoma

A total of 3,025,266 residents lived in Oklahoma in 1980, compared to 169,464 Americans Indians in the State. Oklahoma ranked 26th in size among all states for total population and 2nd in Indian Population. Oklahoma had an unemployment rate of 8.2% for the total population and a rate of 20% for the American Indian population. This rate for American Indians is more than two times higher than for the state rate. Oklahoma has the lowest Indian unemployment rate of those states in Region VI. The unemployment rates for Oklahoma based upon the 1980 U.S. Census were 21.3% for Indians living in tribal historic areas, 8.4% all Indians within the state and 4.1% for the total state population. Two of 29 historic areas were not included in the unemployment figures for Indians living in historic areas because of the small numbers identified in the U.S. Census.

Texas

Texas had a total population of 14,228,383 citizens and a American Indian population of 40,074 in 1980. The total population of Texas ranked 3rd nationally and the American Indian population ranked 9th in this respect. Texas total population experienced an unemployment rate of 8.9% while the American Indian population experienced a rate of 26%. This rate for American Indians is almost three times higher than the total unemployment rate for the state. The Texas total unemployment rate ranked 3rd for those states in Region VI. The American Indian unemployment rate also ranks 3rd for Indians in this Region. The 1980 U.S. Census estimates of unemployment were 20.2% for Indians living on reservations, 5.8% for all Indians in the state, and 4% for the total state population.

REGION VII

Iowa

Iowa ranks 27th in size nationally with 2,913,287 residents in 1980. Of these persons, 5453 were American Indian. This figure ranks Iowa 40th of all states nationally for American Indian population. American Indians in Iowa have an unemployment rate of 59% while the total population experienced a rate of 7%. Iowa ranks 1st along with Nebraska for those targeted states in Region VII for the highest American Indian unemployment rate. This rate is 18% higher than the unemployment rate for American Indians in the 28 targeted states and is eight times higher than the unemployment rate for all Iowa residents. Region VII has a total Indian unemployment rate of 44%, this figure is 3% higher than the rate for all 28 targeted states. The unemployment rates for Iowa based upon the 1980 U.S. Census was 28.2% for Indians living on reservations, 15.4% for all Indians in the state and 5% for the total population.

Kansas

According to the 1980 Census, there was a total of 2,363,208 people living in Kansas in 1980. This figure ranks Kansas 32nd nationally for total population. The American Indian population of Kansas was 15,371, which ranks the state 21st. American Indians experienced an unemployment rate of 13% and the total population had a rate of 5.6%. The rate for Indian unemployment of Kansas is twenty-eight percent lower than the rate for the 28 targeted states. Kansas has the lowest Indian unemployment rate of any state within this Region. 1980 U.S. Census unemployment estimates for Kansas were 36% for Indians living on reservations, 10.4% for the total state Indian population, and 4% for the total population.

Nebraska

Nebraska ranks 35th in size nationally with a total population of 1,570,006. The American Indian population of the state had been estimated at 9197, according to the 1980 U.S. Census. This number ranks Nebraska 30th nationally in total American Indian population. The total population of Nebraska had an unemployment rate of 5.1% while the American Indian population experienced a rate of 59%. This rate for American Indian residents ranks 1st along with Iowa for any state in Region VII. The unemployment rate for American Indians in Nebraska is more than eleven times higher than for the total state population. The American Indian rate is also 18% higher than the rate for all 28 targeted states. The 1980 U.S. Census showed unemployment rates for Indians living on reservations at 31.4%, 17.8% for the total state Indian population and 3.7% for the total population.

REGION VIII

Colorado

Colorado ranks 28th in size among the 50 states with a total population of 2,888,834 residents in 1980. Colorado also ranks 19th nationally in regards to the American Indian population with 18,059 Indian residents. The total population of Colorado had an unemployment rate of 7.1% while the total American Indian population had a rate of 27%. This rate for Indian residents is almost four times higher than for the rate of the population as a whole. Colorado's Indian rate ranked fourth for all states in Region VIII for Indian unemployment. The Indian unemployment rate is also 16% lower than the rate for the Region as a whole. The unemployment rates for Colorado based upon the 1980 U.S. Census were 24.3% for Indians living on reservations, 10.7% for all Indians in the state, and 5% for the total state population.

Montana

Montana ranks 44th nationally in size with a total resident population of 786,690 as of 1980. Montana's American Indian population was 37,270 in 1980 which ranks the state 12th nationally in total Indian population. American Indians in Montana experienced an unemployment rate of 45% in 1986, while the total population had an unemployment rate of 7.9%. Indian unemployment in Montana is more than five times the rate for the non-Indian population. The rate for Montana's Indians is 4% higher than the rate for the All Indians in the targeted 28 states and ranks the state fourth among those states in Region VIII. The 1980 U.S. Census estimates of unemployment for Indians living on reservations was 37.3%, 20.3% for all Indians in the state and 8.3% for the total population.

North Dakota

North Dakota ranks 46th in size nationally with a total resident population of 652,695 as of 1980. Of these persons, 20,157 are American Indians. This number ranks North Dakota 16th nationally for Indian populations. All North Dakota residents experienced an unemployment rate of 6.4%, while the American Indian population experienced a rate of 51%. The American Indian unemployment rate of North Dakota ranks 3rd of all states in Region VIII and is 10% higher than the rate for all 28 targeted states. The unemployment rates for North Dakota based upon the 1980 U.S. Census were 36.7% for Indians living on reservations, 19.2% for all Indians within the state, and 5.3% for the total population.

South Dakota

South Dakota ranks 45th in size nationally with a total population of 690,178 as of 1980. South Dakota also has an American Indian population of 45,101 and ranks 8th nationally. American Indians living in South Dakota had an unemployment rate of 61% in 1986 while the unemployment rate for the total South Dakota population was 4.6%. The rate for American Indians is more than 13 times the rate for the total population of South Dakota. South Dakotas Indian unemployment rate ranks first of any state in Region VIII. The rate for the total South Dakota population is the lowest of any state in the targeted 28 and the rate for American Indians is the highest of any state in the targeted 28. The unemployment rates for South Dakota based upon the 1980 U.S. Census were 36.6% for

Indians living on reservations, 20.3% for all Indians in the state and 4.9% for the total state population.

Utah

Utah had a total resident population of 1,461,037 in 1980, which ranked it 36th nationally. The American Indian population of Utah is 19,256, which ranks the state 18th. The total resident unemployment was 5.7% while the American Indian rate was 22%. The American Indian rate is almost four times higher than the total resident rate for the state. The rate for American Indians in Utah also ranks the state sixth in Region VIII and is 21% lower than the total regional rate. The Utah American Indian unemployment rate is 19% lower than the rate for all the 28 targeted states. The 1980 U.S. Census estimates of unemployment for Indians living on reservations was 38.4%, 12.8% for the total Indian population, and 5.5% for the total state population. One of four reservations were not included in the unemployment figures for Indians on reservations because of the small numbers identified in the U.S. Census.

Wyoming

Wyoming ranks 50th of all the states nationally in total population with 470,816 residents in 1980. The American Indian population is 7,125 and ranks tha state 37th in total Indian population. American Indians in Wyoming experienced an unemployment rate of 53% while the total resident population had a rate of 9.3% in 1986. The rate for Wyoming's Indian population is more than five times the rate for the total resident population of the state. The Indian rate ranks 2nd in the Region behind South Dakota and is 10% higher than all states in the region. The Wyoming Indian rate is also more than seven times higher than the total population rate for all the states in Region VII. The unemployment rates for Wyoming based upon the 1980 U.S. Census were 30.2% for Indians on reservations, 8.2% for all Indians in the state, and 4.1% for the total population.

REGION IX

Arizona

The total population of Arizona in 1980 was 2,717,866 which ranked the state 29th nationally. Arizona's American Indian population was 152,857 in 1980 and ranked the state 3rd nationally. The total resident population of Arizona had a unemployment rate of 6.8% while the American Indian population had a rate of 45%. The American Indian rate was more than six times higher than the total population rate and is ranked 2nd of the targeted states in Region IX. The Indian rate is also 1% higher than the total 28 targeted state rate. The Indian rate of Arizona is 3% higher than the average rate for all Indians in Region IX, which was 42%. The unemployment rates for Arizona based upon the 1980 U.S. Census were 27.5% for Indians living on reservations, 14.4% for all Indians in the state, and 6.2% for the total population. Three of 22 reservations were not included in the unemployment figures for Indians living on reservations because of the small numbers represented in the U.S. Census.

California

California ranks 1st nationally in size with 23,668,562 total residents as of 1980. The American Indian population of California also ranks 1st nationally with 201,311 American Indians with the majority of these residing in urban areas of the state. American Indians in California had a unemployment rate of 47% while the total population had a rate of 6.7%. The American Indian rate is seven times higher than the total population rate. The unemployment for American Indians in California ranks 1st of all targeted states in Region IX and is 6% higher than the rate for all 28 targeted states. The unemployment rates for California based upon the 1980 U.S. Census were 34.2% for Indians living on reservations, 11.8% for all Indians in the state and 6.5% for the total population. Thirty-six of the 76 reservations and rancherias were not included in the unemployment figures for Indians on reservations because of the small numbers represented in the Census.

Nevada

Nevada ranks 42nd in size with 799,184 residents as of 1980. The American Indian population of Nevada is 13,304 and ranks the state 22nd nationally. American Indians in Nevada experienced an unemployment rate of 35%, while the total popualtion had a rate of 6.2%. The rate for American Indians is more than five times higher than the total population rate and is 7% lower than the region IX rate for Indians and 6% lower than the total rate for Indians in all 28 targeted states. The 1980 U.S. Census estimates of unemployment for American Indians living on reservations was 27.5%, 10.7% for all Indians in the state and 5.9% for the total population. Two of 19 reservations were not included in the unemployment figures for Indians living on reservations because of the small numbers represented in the Census.

REGION X

Alaska

Alaska ranks 51st in size among all the states with a population of 400,481. The American Indian population is 64,047 as of 1980 for the state. The American Indians experienced an unemployment rate of was 50% and this is more than four times the rate of the total population of Alaska which is 10.9%. The American Indian rate ranks 2nd among all targeted states in Region X and is 7% higher than the total rate for all the states in the region. The unemployment rates for American Indians in Alaska based upon the 1980 U.S. Census were 26.2% for Alaskan Natives living on reservations, 20.3% for all Indians within the state and 9.7% for the total population. Native villages and corporations were not included in the unemployment rates for Indians on reservations because of small numbers represented in the U.S. Census.

Idaho

Idaho ranks 41st in size with 943,935 total residents as of 1980. The American Indian population of Idaho is 10,521 and ranks the state 26th nationally. The total unemployment rate of Idaho was 8.4% while the American Indian rate was 44%. The American Indian rate was more than five times the rate of the total population of the state. The American Indian rate also ranked 3rd of all states in Region X. The 1980 U.S. Census unemployment estimates were 33.6% for Indians living on reservations, 17.8% for all Indians in the state and 8% for the total state population. One of four reservations was not included in the unemployment figures for Indians living on reservations because of the small numbers represented in the Census.

Oregon

Oregon ranks 30th nationally in terms of total population with a total of 2,632,663 residents. The American Indian population of the state is 27,309 and ranks 15th overall. American Indians in Oregon experienced an unemployment rate of 26% , while the total state experienced a rate of 8.5%. The Indian rate is three times the state rate and is 17% lower than the rate for Indians in all targeted states in Region X. Unemployment rates for Oregon based upon the 1980 U.S. Census were 31.5% for Indians living on reservations, 17.3% for all Indians within the state and 8.3% for the total population.

Washington

Washington ranks 20th in size with a population of 4,130,163. Of these persons, 60,771 are American Indians and ranks the state 7th nationally. The total resident population of Washington experienced an unemployment rate of 7.9% and the American Indian population had a rate of 53% for 1986. The American Indian rate is more than six times the rate for the total resident population of the state. Washington's Indian unemployment rate ranks 1st of all states in Region X and is 12% higher than the average Indian rate of all targeted states. The 1980 U.S. Census unemployment estimates for American Indians living on reservations was 35.7%, 16.2% for all Indians in the state, and 7.4% for the total population. Five of 25 reservations were not included in the unemployment figures for Indians living on reservations because of the small numbers represented in the U.S. Census.

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APPENDIX D-2

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over)

Table 1

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Maine by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	14.0	14.0	20.0	20.0
Technical, Sales, & Administrative Support	22.0	33.0	26.0	39.0
Service	22.0	25.0	13.0	19.0
Farming, Forestry, & Fishing	6.0	4.0	4.0	1.0
Precision Production, Craft, & Repair	13.0	4.0	15.0	3.0
Operators, Fabricators, & Laborers	23.0	20.0	22.0	18.0

Table 2

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for New York by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial Professional Specialty	16.1	17.9	25.7	23.6
Technical, Sales, & Administrative Support	26.6	40.3	33.5	48.1
Service	18.8	22.8	13.9	15.9
Farming, Forestry, & Fishing	1.8	.4	1.3	.5
Precision Production, Craft, & Repair	13.1	3.9	10.4	1.8
Operators, Fabricators, & Laborers	23.6	14.7	15.2	10.1

Table 3

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Florida by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	16.5	17.0	23.0	21.3
Technical, Sales, & Administrative Support	23.4	40.0	32.0	47.2
Service	18.2	27.0	15.0	19.4
Farming, Forestry, & Fishing	5.2	2.0	3.0	1.5
Precision Production, Craft, & Repair	18.2	3.0	13.0	2.3
Operators, Fabricators, & Laborers	18.5	11.0	14.0	8.3

Table 4

Occupational Participation of American Indian and Civilian Civilian Labor Force (16 Years and Over) for Mississippi by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	14.9	16.1	19.3	19.9
Technical, Sales, & Administrative Support	18.2	27.8	25.8	38.4
Service	20.5	26.4	12.3	19.1
Farming, Forestry, & Fishing	5.5	.5	4.4	.9
Precision Production, Craft, & Repair	14.1	5.3	13.9	2.8
Operators, Fabricators, & Laborers	26.8	23.9	24.3	18.9

Table 5

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for North Carolina by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	10.2	13.6	18.9	18.7
Technical, Sales, & Administrative Support	13.7	19.4	25.7	36.2
Service	11.9	16.5	11.3	15.4
Farming, Forestry, & Fishing	6.6	2.7	3.4	1.2
Precision Production, Craft, & Repair	18.8	3.6	13.3	3.1
Operators, Fabricators, & Laborers	38.8	44.2	26.9	25.4

Table 6

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Michigan by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	13.3	15.8	21.0	20.0
Technical, Sales, & Administrative Support	20.8	35.6	29.0	46.0
Service	18.8	28.9	14.0	20.0
Farming, Forestry, & Fishing	2.4	.4	2.0	1.0
Precision Production, Craft, & Repair	15.4	2.6	13.0	2.0
Operators, Fabricators, & Laborers	29.3	16.7	21.0	11.0

Table 7

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Minnesota by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	14.7	14.0	23.0	20.9
Technical, Sales, & Administrative Support	24.4	36.0	30.1	44.7
Service	22.2	29.0	14.1	20.9
Farming, Forestry, & Fishing	2.4	1.0	5.7	1.9
Precision Production, Craft, & Repair	11.4	3.0	11.2	2.2
Operators, Fabricators, & Laborers	24.9	17.0	15.9	9.4

Table 8

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Wisconsin by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	13.4	16.8	20.2	18.7
Technical, Sales, & Administrative Support	19.9	33.3	27.4	42.3
Service	20.9	28.5	14.1	20.9
Farming, Forestry, & Fishing	3.6	1.2	5.5	2.8
Precision Production, Craft, & Repair	12.6	2.3	12.0	2.2
Operators, Fabricators, & Laborers	29.6	17.9	20.8	13.1

Table 9

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Louisiana by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Civilian Labor Force M %	Civilian Labor Force F %
Managerial & Professional Specialty	11.0	15.0	20.8	22.0
Technical, Sales, & Administrative Support	19.4	41.0	29.2	47.0
Service	12.1	26.0	13.3	21.0
Farming, Forestry, & Fishing	5.3	1.0	2.4	1.0
Precision Production, Craft, & Repair	18.3	3.0	15.8	2.0
Operators, Fabricators, & Laborers	33.9	14.0	18.5	7.0

Table 10

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for New Mexico by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Civilian Labor Force M %	Civilian Labor Force F %
Managerial & Professional Specialty	16.9	19.6	24.2	23.8
Technical, Sales, & Administrative Support	24.4	40.1	30.3	47.1
Service	18.6	26.7	13.5	19.3
Farming, Forestry, & Fishing	2.5	.8	3.3	.9
Precision Production, Craft, & Repair	16.9	3.9	14.9	2.5
Operators, Fabricators, & Laborers	20.7	8.9	13.8	6.4

Table 11

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Oklahoma by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	15.6	17.4	21.1	20.3
Technical, Sales, & Administrative Support	23.9	39.2	30.1	47.3
Service	16.4	25.3	12.5	19.7
Farming, Forestry, & Fishing	3.7	1.1	3.8	1.2
Precision Production, Craft, & Repair	15.9	2.7	15.3	2.5
Operators, Fabricators, & Laborers	24.5	14.3	17.2	9.0

Table 12

Occupational Participation of American Indian and Civilian Labor Force (17 Years and Over) for Texas by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	17.2	17.9	21.7	21.1
Technical, Sales, & Administrative Support	28.3	45.3	31.5	48.7
Service	13.4	20.4	11.9	18.0
Farming, Forestry, & Fishing	1.8	.7	2.9	.8
Precision Production, Craft, & Repair	18.9	3.7	15.0	2.5
Operators, Fabricators, & Laborers	20.4	12.0	17.0	8.9

Table 13

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Iowa by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Civilian Labor Force M %	Civilian Labor Force F %
Managerial & Professional Specialty	15.8	14.0	20.0	19.9
Technical, Sales, & Administrative Support	20.0	36.0	26.7	42.4
Service	19.1	27.0	13.8	22.6
Farming, Forestry, & Fishing	2.1	1.0	9.7	2.9
Precision Production, Craft, & Repair	16.6	7.0	11.8	2.4
Operators, Fabricators, & Laborers	26.4	15.0	18.0	9.8

Table 14

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Kansas by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force M %	F %	Civilian Labor Force M %	F %
Managerial & Professional Specialty	16.2	19.0	22.0	21.0
Technical, Sales, & Administrative Support	22.3	38.0	29.0	45.0
Service	15.4	21.0	13.0	20.0
Farming, Forestry, & Fishing	2.3	1.0	6.0	2.0
Precision Production, Craft, & Repair	18.1	6.0	14.0	3.0
Operators, Fabricators, & Laborers	25.7	15.0	16.0	9.0

Table 15

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Nebraska by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Civilian Labor Force M %	Civilian Labor Force F %
Managerial & Professional Specialty	16.4	18.5	21.3	21.5
Technical, Sales, & Administrative Support	19.2	29.6	27.5	42.7
Service	22.3	28.5	13.8	22.0
Farming, Forestry, & Fishing	4.8	2.9	10.2	2.5
Precision Production, Craft, & Repair	11.6	3.4	11.6	2.4
Operators, Fabricators, & Laborers	25.7	17.1	15.6	8.9

Table 16

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Colorado by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	18.3	19.0	26.0	24.0
Technical, Sales, & Administrative Support	25.3	38.0	32.0	47.0
Service	21.4	31.0	13.0	18.0
Farming, Forestry, & Fishing	1.9	1.0	3.0	1.0
Precision Production, Craft, & Repair	15.2	3.0	13.0	3.0
Operators, Fabricators, & Laborers	17.9	8.0	13.0	7.0

Table 17

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Montana by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Civilian Labor Force M %	Civilian Labor Force F %
Managerial & Professional Specialty	18.2	16.9	22.6	22.3
Technical, Sales, & Administrative Support	23.9	39.9	27.5	44.2
Service	23.5	32.2	15.1	24.8
Farming, Forestry, & Fishing	6.5	.7	9.3	2.9
Precision Production, Craft, & Repair	11.1	2.9	12.2	1.5
Operators, Fabricators, & Laborers	16.8	7.4	13.3	4.3

Table 18

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for North Dakota by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	17.1	18.5	20.3	20.9
Technical, Sales, & Administrative Support	21.2	34.3	25.9	42.7
Service	26.3	33.5	15.2	27.0
Farming, Forestry, & Fishing	5.1	.8	14.8	3.3
Precision Production, Craft, & Repair	13.5	3.1	11.9	1.6
Operators, Fabricators, & Laborers	16.8	9.8	11.9	4.5

Table 19

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for South Dakota by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Civilian Labor Force M %	Civilian Labor Force F %
Managerial & Professional Specialty	18.6	19.8	19.8	20.8
Technical, Sales, & Administrative Support	24.8	37.7	25.1	39.6
Service	26.4	32.8	14.8	25.4
Farming, Forestry, & Fishing	7.7	1.3	15.9	4.4
Precision Production, Craft, & Repair	9.6	2.0	11.3	2.2
Operators, Fabricators, & Laborers	12.9	6.4	13.1	7.6

Table 20

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Utah by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	10.9	11.2	23.8	21.2
Technical, Sales, & Administrative Support	18.3	29.8	30.5	47.5
Service	21.9	33.7	12.2	17.9
Farming, Forestry, & Fishing	2.5	.5	2.2	.6
Precision Production, Craft, & Repair	16.9	3.1	15.2	2.9
Operators, Fabricators, & Laborers	29.5	21.7	16.1	9.9

Table 21

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Wyoming by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	16.3	23.6	21.5	22.7
Technical, Sales, & Administrative Support	20.5	35.7	25.3	45.8
Service	17.2	31.1	12.5	21.8
Farming, Forestry, & Fishing	5.8	1.3	5.0	1.6
Precision Production, Craft, & Repair	18.6	2.9	19.7	2.2
Operators, Fabricators, & Laborers	21.6	5.4	16.0	5.9

Table 22

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Nevada by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	13.2	13.8	20.9	19.3
Technical, Sales, & Administrative Support	22.0	36.7	29.4	45.9
Service	28.0	36.9	25.6	28.2
Farming, Forestry, & Fishing	3.9	2.2	1.7	.5
Precision Production, Craft, & Repair	14.7	1.6	11.6	1.5
Operators, Fabricators, & Laborers	18.2	8.8	10.8	4.6

Table 23

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for California by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Civilian Labor Force M %	Civilian Labor Force F %
Managerial & Professional Specialty	17.4	18.0	25.0	23.0
Technical, Sales, & Administrative Support	29.1	45.0	33.0	48.0
Service	15.8	21.0	13.0	16.1
Farming, Forestry, & Fishing	3.0	1.0	3.0	1.2
Precision Production, Craft, & Repair	15.3	4.0	12.0	2.9
Operators, Fabricators, & Laborers	19.4	11.0	14.0	8.8

Table 24

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Arizona by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Civilian Labor Force M %	Civilian Labor Force F %
Managerial & Professional Specialty	17.3	21.4	24.8	24.0
Technical, Sales, & Administrative Support	20.5	34.4	30.9	46.5
Service	24.2	31.9	13.6	18.0
Farming, Forestry, & Fishing	4.4	.7	2.7	.8
Precision Production, Craft, & Repair	12.8	2.4	13.9	2.9
Operators, Fabricators, & Laborers	20.8	9.2	14.1	7.8

Table 25

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Alaska by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	18.8	21.0	28.9	28.7
Technical, Sales, & Administrative Support	28.6	42.9	30.9	47.3
Service	22.2	27.4	13.6	17.4
Farming, Forestry, & Fishing	4.1	.7	2.5	.7
Precision Production, Craft, & Repair	11.4	2.1	12.7	1.6
Operators, Fabricators, & Laborers	14.9	5.9	11.4	4.3

Table 26

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Idaho by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force M %	American Indian Civilian Labor Force F %	Civilian Labor Force M %	Civilian Labor Force F %
Managerial & Professional Specialty	15.0	18.6	21.8	20.5
Technical, Sales, & Administrative Support	19.0	34.4	27.8	45.0
Service	17.0	26.4	12.8	20.5
Farming, Forestry, & Fishing	12.0	1.8	8.9	3.0
Precision Production, Craft, & Repair	15.0	2.9	12.7	2.0
Operators, Fabricators, & Laborers	22.0	15.9	16.0	9.0

Table 27

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Oregon by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	14.2	16.2	23.2	22.4
Technical, Sales, & Administrative Support	22.6	38.2	29.5	45.3
Service	20.2	29.3	13.5	19.9
Farming, Forestry, & Fishing	5.3	2.0	4.6	1.7
Precision Production, Craft, & Repair	11.9	1.9	12.4	2.4
Operators, Fabricators, & Laborers	25.8	12.4	16.8	8.3

Table 28

Occupational Participation of American Indian and Civilian Labor Force (16 Years and Over) for Washington by Sex

Occupations by Major Groupings	American Indian Civilian Labor Force		Civilian Labor Force	
	M %	F %	M %	F %
Managerial & Professional Specialty	16.9	18.3	23.8	22.1
Technical, Sales, & Administrative Support	24.7	41.1	30.7	47.6
Service	18.7	25.7	12.9	19.1
Farming, Forestry, & Fishing	6.9	2.3	3.9	1.5
Precision Production, Craft, & Repair	12.5	2.4	13.8	2.3
Operators, Fabricators, & Laborers	20.3	10.2	14.9	7.4

APPENDIX D-3

Employment in Industry by States for American Indians on Reservations and Total State Employed Persons 16 Years and Older

Table 1

Employment by Industry in Florida for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	8.2	3.5
Mining	.2	.3
Construction	10.0	8.3
Manufacturing	5.3	13.0
Transportation, Communication, & Public Utilities	3.6	8.0
Wholesale Trade	.2	4.4
Retail Trade	10.5	19.2
Finance, Insurance, & Real Estate	1.6	7.6
Services	31.2	30.3
Public Administration	29.2	5.4

Table 2

Employment by Industry in Mississippi for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	2.3	4.4
Mining	—	1.7
Construction	4.0	7.2
Manufacturing	4.8	24.6
Transportation, Communication, & Public Utilities	1.0	6.9
Wholesale Trade	—	4.1
Retail Trade	.9	14.7
Finance, Insurance, & Real Estate	1.7	4.3
Services	49.0	27.0
Public Administration	36.3	5.1

Table 3

Employment by Industry in North Carolina for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	1.1	3.4
Mining	.1	.2
Construction	4.5	6.2
Manufacturing	23.0	33.0
Transportation, Communication, & Public Utilities	3.4	6.1
Wholesale Trade	.1	4.1
Retail Trade	7.4	14.3
Finance, Insurance, & Real Estate	.9	4.2
Services	40.9	24.4
Public Administration	18.6	4.1

Table 4

Employment by Industry in Michigan for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	3.5	1.6
Mining	.3	.4
Construction	11.1	4.0
Manufacturing	8.6	30.3
Transportation, Communication, & Public Utilities	.3	6.0
Wholesale Trade	—	4.0
Retail Trade	4.4	16.0
Finance, Insurance, & Real Estate	.3	5.0
Services	17.5	28.4
Public Administration	54.0	4.3

Table 5

Employment by Industry in Minnesota for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	5.5	5.9
Mining	—	.8
Construction	12.5	5.3
Manufacturing	15.5	20.2
Transportation, Communication, & Public Utilities	3.7	6.8
Wholesale Trade	.7	4.9
Retail Trade	4.5	17.0
Finance, Insurance, & Real Estate	2.7	5.7
Services	7.8	29.7
Public Administration	47.1	3.7

Table 6

Employment by Industry in Wisconsin for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	3.5	5.6
Mining	—	.1
Construction	7.4	4.4
Manufacturing	15.7	28.4
Transportation, Communication, & Public Utilities	1.6	5.7
Wholesale Trade	.2	3.7
Retail Trade	2.9	16.5
Finance, Insurance, & Real Estate	1.5	5.0
Services	31.6	27.0
Public Administration	35.6	3.6

Table 7

Employment by Industry in Louisiana for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	—	2.6
Mining	—	4.9
Construction	—	9.3
Manufacturing	—	14.4
Transportation, Communication, & Public Utilities	—	8.7
Wholesale Trade	—	4.8
Retail Trade	—	16.4
Finance, Insurance, & Real Estate	—	5.1
Services	50.0	28.6
Public Administration	50.0	5.2

Table 8

Employment by Industry in New Mexico for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	4.9	3.7
Mining	7.5	5.7
Construction	7.5	8.4
Manufacturing	20.2	7.4
Transportation, Communication, & Public Utilities	2.1	7.4
Wholesale Trade	.1	3.3
Retail Trade	2.0	17.4
Finance, Insurance, & Real Estate	.9	5.2
Services	30.2	33.0
Public Administration	24.6	8.5

Table 9

Employment by Industry in Oklahoma for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	5.6	3.8
Mining	3.4	5.0
Construction	11.7	7.2
Manufacturing	21.6	16.7
Transportation, Communication, & Public Utilities	4.8	7.5
Wholesale Trade	1.7	4.5
Retail Trade	10.5	16.4
Finance, Insurance, & Real Estate	2.4	5.4
Services	27.8	27.4
Public Administration	10.5	6.1

Table 10

Employment by Industry in Texas for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	1.6	3.0
Mining	—	3.3
Construction	1.6	9.0
Manufacturing	7.9	18.0
Transportation, Communication, & Public Utilities	13.4	7.5
Wholesale Trade	.8	5.0
Retail Trade	7.9	16.5
Finance, Insurance, & Real Estate	3.2	6.0
Services	23.6	27.2
Public Administration	40.0	4.5

Table 11

Employment by Industry in Iowa for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	4.5	10.0
Mining	—	.2
Construction	16.4	5.2
Manufacturing	—	20.2
Transportation, Communication, & Public Utilities	—	6.4
Wholesale Trade	—	5.1
Retail Trade	—	16.6
Finance, Insurance, & Real Estate	3.0	5.2
Services	41.8	27.3
Public Administration	34.3	3.8

Table 12

Employment by Industry in Kansas for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	14.3	6.0
Mining	—	2.0
Construction	7.2	6.0
Manufacturing	6.3	19.0
Transportation, Communication, & Public Utilities	—	8.0
Wholesale Trade	—	5.0
Retail Trade	6.3	16.0
Finance, Insurance, & Real Estate	4.8	6.0
Services	22.2	28.0
Public Administration	38.9	4.0

Table 13

Employment by Industry in Nebraska for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	3.9	11.0
Mining	—	.2
Construction	7.3	6.0
Manufacturing	4.9	13.8
Transportation, Communication, & Public Utilities	1.3	9.3
Wholesale Trade	—	4.7
Retail Trade	1.6	17.0
Finance, Insurance, & Real Estate	3.0	6.0
Services	48.0	28.0
Public Administration	30.0	4.0

Table 14

Employment by Industry in Colorado for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	5.1	3.1
Mining	.3	2.7
Construction	11.0	7.9
Manufacturing	4.8	14.1
Transportation, Communication, & Public Utilities	2.4	8.0
Wholesale Trade	—	4.5
Retail Trade	1.2	17.4
Finance, Insurance, & Real Estate	2.1	7.1
Services	31.6	29.6
Public Administration	41.5	5.6

Table 15

Employment by Industry in Montana for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	10.2	10.5
Mining	.8	2.8
Construction	9.3	7.0
Manufacturing	6.9	7.4
Transportation, Communication, & Public Utilities	2.6	9.0
Wholesale Trade	.4	4.0
Retail Trade	5.5	18.5
Finance, Insurance, & Real Estate	1.8	4.9
Services	35.7	29.3
Public Administration	26.8	6.6

Table 16

Employment by Industry in North Dakota for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	5.9	15.2
Mining	.4	2.2
Construction	7.3	7.0
Manufacturing	9.6	5.8
Transportation, Communication, & Public Utilities	2.1	7.7
Wholesale Trade	.3	5.0
Retail Trade	4.8	18.4
Finance, Insurance, & Real Estate	2.4	4.6
Services	37.9	29.0
Public Administration	29.3	5.1

Table 17

Employment by Industry in South Dakota for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	8.7	16.2
Mining	.1	.9
Construction	6.2	5.9
Manufacturing	3.8	9.6
Transportation, Communication, & Public Utilities	2.8	6.0
Wholesale Trade	.2	4.7
Retail Trade	2.7	17.3
Finance, Insurance, & Real Estate	2.0	4.7
Services	41.4	29.0
Public Administration	32.1	5.7

Table 18

Employment by Industry in Utah for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	7.3	2.4
Mining	2.8	3.1
Construction	6.3	7.1
Manufacturing	4.5	15.8
Transportation, Communication, & Public Utilities	2.0	7.5
Wholesale Trade	—	4.7
Retail Trade	3.8	16.5
Finance, Insurance, & Real Estate	3.0	5.9
Services	32.0	28.4
Public Administration	38.3	8.6

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Table 19

Employment by Industry in Wyoming for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	11.0	5.3
Mining	3.2	14.9
Construction	9.1	10.3
Manufacturing	3.3	5.4
Transportation, Communication, & Public Utilities	3.3	9.2
Wholesale Trade	.2	3.2
Retail Trade	2.3	16.0
Finance, Insurance, & Real Estate	3.0	4.0
Services	34.4	26.0
Public Administration	30.2	5.7

Table 20

Employment by Industry in Arizona for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	5.5	2.9
Mining	5.3	2.4
Construction	7.6	8.2
Manufacturing	7.3	14.5
Transportation, Communication, & Public Utilities	5.3	6.6
Wholesale Trade	.2	3.9
Retail Trade	5.4	18.1
Finance, Insurance, & Real Estate	1.3	6.9
Services	38.8	29.8
Public Administration	23.3	6.7

Table 21

Employment by Industry in California for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	5.6	3.1
Mining	.1	.4
Construction	5.7	5.7
Manufacturing	7.1	20.3
Transportation, Communication, & Public Utilities	2.7	7.1
Wholesale Trade	.2	4.4
Retail Trade	3.9	16.5
Finance, Insurance, & Real Estate	1.6	7.1
Services	40.6	30.3
Public Administration	32.5	5.1

Table 22

Employment by Industry in Nevada for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	16.0	1.7
Mining	.4	1.4
Construction	9.7	7.9
Manufacturing	3.2	5.9
Transportation, Communication, & Public Utilities	1.8	7.6
Wholesale Trade	1.2	2.7
Retail Trade	4.4	16.2
Finance, Insurance, & Real Estate	1.7	5.9
Services	30.8	44.3
Public Administration	30.8	6.4

Table 23

Employment by Industry in Alaska for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	5.4	3.1
Mining	.7	2.9
Construction	15.3	7.9
Manufacturing	9.9	6.3
Transportation, Communication, & Public Utilities	.2	11.2
Wholesale Trade	11.2	2.5
Retail Trade	11.2	15.1
Finance, Insurance, & Real Estate	1.9	5.1
Services	29.1	30.0
Public Administration	15.1	15.9

Table 24

Employment by Industry in Idaho for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	11.0	10.0
Mining	3.4	1.4
Construction	8.7	7.0
Manufacturing	10.9	14.0
Transportation, Communication, & Public Utilities	1.8	7.5
Wholesale Trade	.1	4.5
Retail Trade	5.4	17.6
Finance, Insurance, & Real Estate	2.3	5.4
Services	24.0	26.7
Public Administration	32.4	5.9

Table 25

Employment by Industry in Oregon for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	7.8	4.6
Mining	—	.2
Construction	4.5	6.4
Manufacturing	19.1	19.5
Transportation, Communication, & Public Utilities	2.2	7.2
Wholesale Trade	.2	4.7
Retail Trade	3.5	17.9
Finance, Insurance, & Real Estate	1.7	6.2
Services	28.2	28.3
Public Administration	32.8	5.0

Table 26

Employment by Industry in Washington for American Indians on Reservations And Total State Employed Persons 16 Years and Older

Industry	American Indians Employed on Reservations %	Total State Employed Persons %
Agriculture, Forestry, Fishing, Hunting, & Trapping	16.0	3.9
Mining	3.8	.2
Construction	7.9	6.8
Manufacturing	9.4	19.5
Transportation, Communication, & Public Utilities	3.0	7.8
Wholesale Trade	.6	5.1
Retail Trade	7.2	16.9
Finance, Insurance, & Real Estate	1.6	6.2
Services	23.9	28.7
Public Administration	26.6	4.9

APPENDIX D-4

Work Disability Status of Non-Institutional American Indians and Total State Populations (16-64 Years Old)

Maine

The 1980 U.S. Census showed that the percentages of work disabled for American Indians in Maine were 17.2% for males and 13.2% for females. Of the work disabled males 36% lived in urban areas while 64% lived in rural areas. Thirty-one percent of the work disabled females lived in urban areas compared to 69% in rural areas.

By comparison the percentages for the total work disabled population in Maine were males 11% and females 8.5%. A higher percentage of male and female work disabled in the total population lived in urban areas, males 44% and females 48%.

New York

In New York, 13.8% of both the male and female population of American Indians were work disabled. These percentages are higher than those reported for the total population which were 8% for males and 7.4% for females. The majority of work disabled in both groups and by gender resided in urban areas, American Indian males 69% and females 76.5%; and total population males 83.5% and females 87%.

Florida

The 1980 U.S. Census showed that the percentages of work disabled for American Indians in Florida were 15.8% for males and 12.4% for females in contrast to the total population which were males 11.1% and females 8.9%.

The majority of work disabled persons in both groups by gender lived in urban areas of Florida: American Indian males 80.5% and females 76%; and total population males 80% and females 82%.

Mississippi

The percentages of work disabled American Indians in Mississippi were 14.5% for males and 14.3% for females compared to males 12.3% and females 11.3% for the total population.

The majority of work disabled in both groups by gender lived in rural areas of Mississippi: American Indian males 53% and females 65%; and total population males 59%, females 56.5%.

North Carolina

In North Carolina, the percentages of work disabled American Indian males was 13.7% and 13.6% for females. In the total population in North Carolina 10% of males and 9.5% of females were work disabled.

While higher percentages of work disabled American Indians lived in rural areas than the total population, the majority of the work disabled in both groups by gender lived in rural areas of North Carolina. Seventy-nine percent of American Indian males and 71.5% of females compared to total population males 57% and females 54%.

Michigan

The percentages of work disabled American Indians in Michigan were 14.6% for males and 16.1% for females compared to males 9.7% and females 8.9% in the total population.

The majority of work disabled persons in both groups by gender lived in urban areas of Michigan: Sixty-five percent of American Indian males and 75% of females campared to the total population males 70% and females 74%.

Minnesota

In Minnesota, the percentages of work disabled American Indians was 14.7% for males and 9.6% for females compared to males 7.9% and females 6.2% in the total population.

The majority of work disabled individuals in both groups by gender lived in urban areas: American Indian males 62% and females 63%; and total population males 63% and females 69%.

Wisconsin

The percentages of work disabled American Indians in Wisconsin were 12.9% for males and 9.6% for females compared to work disabled in the total population which was 7.5% for males and 6.1% for females.

The majority of work disabled American Indians lived in rural areas; males 58% and females 53%. By contrast the majority of work disabled in the total population in Wisconsin lived in urban areas; males 61% and females 67%.

Louisiana

In Louisiana, the percentages of work disabled American Indians were 12.9% for males and 12% for females compared to 10.1% of males and and 9% of females in the total population.

The majority of work disabled persons in the two groups by gender lived in urban areas of Louisiana: American Indian males 56% and females 58.5%; and total population males 64% and females 68%.

New Mexico

The percentages of work disabled in New Mexico were lower for American Indian males 7.9% and females 6.7% when compared to total population males 9.3% and females 7.1%.

The majority of work disabled American Indians in New Mexico lived in rural areas, males 76% and females 78.5% while the majority of work disabled in the total population lived in urban areas, males 70% and females 73.5%.

Oklahoma

In Oklahoma, the percentages of work disabled American Indians were 15.9% for males and 13% for females compared to 11.7% males and 9.9% females who were disabled in the total population.

The majority of work disabled American Indian males 53.5% and females 55% live in rural areas of Oklahoma while the majority of work disabled persons in the total population live in urban areas; males 61% and females 65%.

Texas

The percentages of work disabled American Indians in Texas were 12.8% for males and 11.5% for females. By contrast, work disabled in the total population was 8.3% for males and 7% for females.

Seventy-five percent of work disabled American Indians lived in urban areas. For work disabled in the total population in Texas, 75% of males and 78% females lived in urban areas.

Iowa

In Iowa, the percentages of work disabled American Indians were 12.9% for males and 12.2% for females compared to males 8% and females 6.5% for the total population.

The majority of both work disabled American Indians and those work disabled in the total population lived in urban areas: American Indian males 67.5% and females 79%; and total population males 58% and females 63%.

Kansas

The percentages of work disabled American Indians in Kansas were 13.6% for males and 13.4% for females compared to 8.2% of males and 7.1% of females who were work disabled in the total population.

The majority of the work disabled American Indian population and work disabled in the total population lived in urban areas, American Indian males 69% and females 76%; and total population males 65% and females 70%.

Nebraska

In 1980, the percentages of work disabled American Indians in Nebraska were 13.8% for males and 12.5% for females compared to 7.8% males and 6.2% females who were work disabled in the total population.

Similar to Kansas and Iowa, the majority of work disabled American Indians and those in the total population lived in urban areas, American Indian males 55% and females 66%; and total population males 61.5% and females 68%.

Colorado

The percentages of work disabled American Indians in Colorado were 11.3% for males and 11.6% for females compared to 7.8% of males and 6.7% of females who were work disabled in the total population.

Sevent-five percent of American Indian males and 78% of females lived in urban areas compared to total population males 79% and females 82%.

Montana

In Montana, the percentages of work disabled American Indians was 9.5% for males and 8.7% for females compared to work disabled in the total population which was 9.4% for males and 6.9% for females.

The majority of work disabled American Indians lived in rural areas, males 68% and females 61%. By contrast, more work disabled in the total population lived in urban areas, males 52% and females 57%.

North Dakota

The percentages of work disabled American Indians in North Dakota were 8.6% for males and 9% for females compared to work disabled in the total population which was 7.6% for males and 5.7% for females.

Higher percentages of work disabled American Indians in North Dakota live in rural areas; males 78% and females 73%. Fifty-six percent of work disabled males and 50% of females in the total population live in rural areas of North Dakota.

South Dakota

The percentages of work disabled American Indians in South Dakota in 1980 were 11.8% for males and 8.1% for females. In the total population, there were 7.1% of males and 6% of females who were work disabled.

The majority of disabled American Indians of South Dakota lived in rural areas, males 69% and females 65%. For the total population of work disabled, 52% of the males lived in rural areas and 52% of the females lived in urban areas.

Utah

In Utah, the percentages of work disabled American Indians were 8.5% for males and 7.1% for females. The percentages of work disaled in the total population were slightly lower for males 8.1% and females 7%.

High percentages of work disabled in the total population were concentrated in urban areas; males 83% and females 85%. For American Indians, work disabled individuals lived equally in urban areas. Males and females living in urban areas were 49% and 51%, respectively.

Wyoming

The percentages of work disabled American Indians living in Wyoming were 9.6% for males and 7.1% for females compared to 6.6% and 5.6% for the total population. Fifty-two percent of work disabled American Indian males and 47% of females lived in urban areas of Wyoming. Sixty-three percent of work disabled males in the total state population and 64% of females lived in urban areas.

Arizona

The percentages of work disabled American Indians in Arizona were 10.5% for males and 9.2% for females. For the total population, the rates were 9.8% and 8.4% for males and females.

The majority of work disabled American Indians lived in rural areas, males 74% and females 67%. By contrast, the majority of work disabled in the total population lived in urban areas, males 82% and females 83%.

California

The percentages of work disabled American Indians in California were males 14.6% and females at 14%. This compares to 8.4% and 8% in the total population.

Over eighty percent of work disabled American Indians and those work disabled in the total population lived in urban areas of California. The percentages for American Indian males and females were 82.5% and 84%. In the total population, 89% of work disabled males and 91% of females lived in urban areas.

Nevada

The percentages of work disabled American Indians in Nevada were 11.2% for males and 9.5% for females. For the total population, there were 8.3% work disabled males and 7.2% females.

The majority of work disabled American Indians and those work disabled persons in the total population resided in urban areas of Nevada. Seventy-three percent of American Indian males and 56% of females lived in urban areas. For the total population, 84% of males and 85% of females lived in urban areas.

Alaska

The percentages of work disabled American Indians, Eskimos and Aleuts were 7% for males and 7.1% for females compared to 5.7% for males in the total population and 5% for females.

The majority of work disabled American Indians, Eskimos and Aleuts lived in rural areas of Alaska; males 70% and females 58%. By contrast, the majority of work disabled persons in the total population lived in urban areas, males 61% and females 65%.

Idaho

The percentages of work disabled American Indians in Idaho were 12.3% for males and 12.6% for females compared to 9.7% and 7.7% of males and females in the total population.

Fifty percent of work disabled American Indian males lived in urban areas of Idaho while 40% of the females did. Fifty percent of males and 55% of females in the total population lived in urban areas of Idaho.

Oregon

The percentages of work disabled persons for American Indians were 17.9% for males and 16.5% for females compared to 10.8% and 8.9% for the total population.

The majority of work disabled in both groups by gender resided in urban areas of Oregon. For American Indians, 59% of both males and females lived in urban areas compared to 63% and 68% for males and females in the total population.

Washington

The percentages of work disabled American Indians were 13.8% for males and 14.4% for females compared to 9.4% for males and 8.1% for females in the total population of Washington.

The majority of work disabled in both groups by gender lived in urban areas of Washington. Sixty-two percent of male and 68% of female American Indians lived in urban areas. For the total population, 71% of male and 75% of female lived in urban areas of Washington.

APPENDIX E-1

Questionnaires

QUESTIONNAIRE FOR STATE DIRECTOR

I. State Director - Policy and Strategies in Response to Legislation

1. In 1978 amendments to the Rehabilitation Act specifically addressed the need to improve or increase VR services to Native Americans. The 1986 amendments strengthened the language related to Indians in several sections (12) throughout the Act. Are you aware of the language in the specific sections related to VR services for American Indians?

   Yes _____ No _____

2. Does your agency have any existing policies/initiatives specifically targeted to meet the needs of Indians? Yes _____ No _____

   2.1 If yes, have you developed strategies to implement them?

      2.1.1 If yes, what are those?

   2.2 If no, do you have any plans for implementing a special effort for Indians?

      2.2.1 If yes, what strategies have you identified for initiating effort?

3. When you implement a new initiative, what approaches/strategies/people do you typically rely on?

   3.1 What unique approach may be necessary in improving VR services for Indians?

4. Has a staff person been designated as responsible for addressing legislative changes related to American Indians? Yes _____ No _____

   4.1 If yes, what was the criteria for appointment?

      Training
      Experience
      American Indian

   4.2 How many hours per month does this person spend on this issue?

5. In establishing initiatives for your State, how would you rank improving/expanding VR services to Indians in your service priorities?

      _____ High
      _____ Medium
      _____ Low

6. The new amendments require that the State VR "actively consult" with tribal organizations on the State Plan.

   6.1 What does that mean to you?

6.2 What do you plan to do in response to the requirement?

6.3 Who on your staff will consult with tribes?

6.4 How will you identify which tribal representatives to consult with?

7. Which do you think is the best strategy to improving/increasing VR service to reservation-based Indians?

   a) building VR services for Indians within existing State structures, or

   b) helping tribes secure funding for creating tribally administered programs, or

   c) combination of above--tribal programs operating in conjunction with existing services, or

   d) Other, describe.

8. It is the legislative intent that "the State shall provide VR services to handicapped American Indians residing in the State to the same extent as the State provides such services to other significant segments of the population of individuals with handicaps residing in the State." Section 101(20)

   8.1 What problems or barriers do you foresee in accomplishing this?

   8.2 Are there different barriers for urban versus reservation Indians? If yes, give examples.

   8.3 Have you any suggestions about how to remove barriers or obstacles in the implementation of the new legislation?

9. Does the legislation provide opportunities for you as state director in addressing the VR needs of Indians with disabilities?

10. What do you see as the role of the Regional RSA office in implementing the "Indian Initiatives?"

11. What information or assistance would be useful to your agency in responding to the new legislation?

Summary report ______

Tribe and population information ______

Technical assistance ______

IHS, BIA conterpart and contacts ______

Economic/labor market data ______

II. State Director or Designated Staff Person - Outreach, Consultation, Training/In-Service

A. Outreach

1. Are you now identifying and facilitating participation of Indians in State VR programs? Yes _____ No _____

   If yes, what strategies are being used?

2. Do you have plans for disseminating information regarding the new legislation to Indian tribes or tribal organizations in your state?

B. Consultation with Tribal Organizations

3. How can Indians contribute to the development of the State Plan?

4. What role will tribes plan in the planning process?

5. Whose responsibility is it to identify VR needs of Indians?

   ______ The tribes's
   ______ The State VR agency
   ______ Other

C. Training/In-Service

6. What kind of in-service training are you now offering or planning to develop for VR personnel working directly with Indian clients?

   6.1 Do you get input from tribes in developing in-service training?

7. What in-service training is needed now for your staff relative to service delivery to Indians in your state?

   7.1 Are there different staff training needs for serving reservation and urban Indian clients?

8. Have you any suggestions for cooperative efforts to increase knowledge of VR personnel regarding Indian needs and culture, and also to increase Indian awareness of VR services?

QUESTIONNAIRE FOR DISTRICT MANAGER

1) Does your district office currently serve Indian clients?

2) Do you have staff person(s) specifically responsible for serving reservation Indian clients? Urban Indian clients?

   2.1 Criteria for selection/identification of this personnel.

   2.2 Do you have any Native American staff? Which positions?

   2.3 How large is/are reservation(s) you serve?

   Population ______

   Area ______

   2.4 How often does staff person(s) visit Indian clients on reservation?

   Distance

   Frequency

3) Are the costs of rehabilitation different when serving disabled Indian clients? If yes, what are the reasons?

4) Given that high unemployment of the Indian population is a major barrier to vocational rehabilitation, what existing mechanisms in the State VR system could be used to overcome the barriers to successful rehabilitation of Indian clients?

5) What is the nature of your relationship with tribes and/or tribal organizations in your district?

6) In 1978 amendments to the Rehabilitation Act specifically addressed the need to improve or increase VR services to Native Americans. The 1986 amendments strengthened the language related to Indians in several sections (12) throughout the Act. Has your district implemented activities responding to those legislative changes?

   If yes, what are they?

   If no, do you plan to?

7) What kinds of cooperative efforts have occurred in the past between the State VR and tribes or tribal organizations?

   7.1 How would you facilitate increased cooperation and communiation with tribal organizations in order to improve VR services to Indians?

8) What in-service training relative to Indian cultures and VR needs has been conducted for your staff which serve Indian clients?

   8.1 Do you feel there is a need for in-service training in this area? If yes, identify training topics.

8.2 Have you requested input from tribes in developing training and in-service for staff serving Indian clients?

8.3 Are cooperative training programs which include both Indian representatives and your staff--to increase interaction and understanding on both sides--planned for the future?

If yes, describe.

9) How do you meet the cultural needs of Indians within a VR context?

QUESTIONNAIRE FOR PROJECT DIRECTORS

Rocky Boy, Navajo, Shoshone-Bannock Projects

1) How have VR services to Indian people changed since implementation of the Indian VR project on your reservation?

2) What was the nature and extent of State VR input into the development of your Indian VR project?

3) How far is your tribe from the nearest State VR counselor's office?

4) Do you have on-going contacts with the State VR?

    a) At what level?

    b) With whom?

    c) How often?

    d) Concerning which issues?

5) Have you been contacted or consulted yet by State VR personnel regarding the new legislation? Yes _____ No _____
Regarding the State Plan? Yes _____ No _____

6) Have you initiated contact with the State VR regarding legislative changes related to VR services for Indians?
Yes _____ No _____

    6.1 What strategies do you recommend to the State for facilitating tribal involvement in the development of State Plan?

7) What do you think is the best strategy for improving/increasing VR services to reservation Indians?

    a) building VR services for Indians within existing State structure, or

    b) securing funding for creating tribally administered VR programs, or

    c) combination of above, tribal programs operating in conjunction with existing services, or

    d) other, describe.

8) If an Indian is a member of a tribe with its own VR project, is he/she eligible for State VR services?

9) Are there any formal or informal arrangements for cooperation with State VR when a client of an Indian VR project requires assistance or counseling off-reservation?

    9.1 What State VR services do your clients participate in?

10) Is an Indian from a different tribe or reservation eligible to be served by your VR project? Yes _____ No _____

11) Are your services comparable to those provided by the State VR?
Yes _____ No _____ Explain.

12) What are your staff training needs? Topical areas _____

  12.1 Does your staff participate in State VR training/in-service programs?
  Yes _____ No _____

    a) Which ones?

    b) How often?

    c) Does the state VR offer training/in-service for your staff on your reservation?

    d) Does the state VR request input from your tribe in the development of State VR training and/or in-service programs for staff serving Indian clients?

13) What suppport/commitment to your project are you currently receiving from your your tribal government?

14) a) What barriers or obstacles are you aware of to improving/increasing VR services to Indians?

  b) Have you any ideas about how to remove or overcome barriers or obstacles to improving/increasing VR services to American Indians?

  c) What new opportunities does the legislation create for your tribe?

15) What resouces and/or information would be helpful to you, and possibly other tribes, during the early stage of planning and implementing the new legislation? (Examples which could be developed into TA)

APPENDIX E-2

Quantitative Analysis

Quantitative Analysis: The Relationship Between American Indian Population Characteristics and State VR Agency Policies and Activities

Demographic characteristics of the Indian populations in the 27 identified states, such as total Indian population, percent of state population, number of recognized tribes, urban or rural residency patterns were compared to policies and activities of the State VR agencies. The results are discussed in Section E under "Relationship Between American Indian Population Characteristics and State VR policies and Activities". The following is a discussion of the statistical procedures applied to determine the relationships. Results of the application of each of the three correlation procedures are presented in the Table 1 in this section.

Several measures of association have been applied to the variables of this study. Each will be briefly discussed in turn. Pearson's r (correlation coefficient) is perhaps the most familiar of these. It measures the direction and extent of linear association, or co-movement, between two variables. A positive sign (+) implies direct association, while a negative sign (-) suggests an inverse relationship in terms of magnitude, and 0 = no linear relationship. Pearson's r is bounded by -1.00 and 1.00, with larger absolute values indicating "stronger" linear relationships. It is important to keep in mind that Pearson's r cannot gauge causality or precedence of the two variables. In other words, all we can say is that "x and y move together." But we cannot make statements about which one caused, or preceded, which. One important assumption which is necessary in order to test hypotheses using Pearson's r is that the two variables have a bivarate normal distribution. However, as many of the variables in the present study are categorical in nature, it is likely that this assumption may not hold. As a result, the Pearson's r measure was supplemented by two of its non-parametric (distribution-free) counterparts. As shown in Table 2 it turns out that in almost all cases, all three measures of association led to the same conclusion regarding the null hypothesis (H_o: $r = 0$).

It is also worth mentioning that, while these magnitudes may seem "small" in an absolute sense, they need to be evaluated in the context of their particular discipline. Marketing researchers and others in the "softer" applied behavioral sciences have long used benchmarks as low as 0.30 and even 0.20, depending upon the setting. The important thing is to look for significance relative to the customary benchmarks in one's field.

The first of these non-parametric correlation coefficients is Spearman's r. Basically, it is highly similar to Pearson's in its underlying form. However, Spearman's calculates the association between the ranks of two sets of variables, rather than the variables themselves. Therefore, it is less likely that one extreme value in either the x or y set will unduly bias or skew the results. The second nonparametric correlation coefficient is known as Kendall's Tau (T). It is calculated by looking at the directions of difference between successive pairs of x and y variables. (In other words, are larger x's associated with larger, or smaller, y's?). Typically Spearman's and Kendall's T will not yield the exact same values in a particular case. However, they both should lead to the same decision concerning hypothesis testing. (Recall that the null states "there is no linear association between x and y", while the alternative states, "there is significant linear association.")

Also, regarding the issue of p-value and statistical significance, we may have even more confidence in the robustness of these results, due to the relatively small sample sizes. In other words, it is mathematically possible to inflate the magnitudes of these correlation coefficients simply by continuing to increase sample size--even between two variables which are not expected to be linearly associated. But here we have sample sizes in the "small-to-moderate" range. Therefore, we may have greater confidence that those correlation coefficients with low p-values are indeed pointing to "real" relationships between the two variables in question.

APPENDIX E-2

Table 1

Relationship Between American Indian Population Characteristics and State VR Agency Policies and Activities

	Designation of staff [1] responsibility	Priority of improving [2] VR service to Indians	Consultation [3] approach	Preferred [4] strategy
Total Indian Populatio	*[5] .3326 [6] (.08)	* .3343 (.005)	.1195 (.180)	.1628 (.113)
	*.3992 (.007)	*.3992 (.007)	.1492 (.186)	.1992 (.115)
	*.3782 (.010)	*.3782 (.010)	.0951 (.285)	.3331 (.021)
Percent of State Population	.1403 (.153)	*.2651 (.021)	.0688 (.299)	.1093 (.208)
	.1683 (.156)	*.3408 (.018)	.0742 (.329)	.1336 (.212)
	.0504 (.382)	*.3000 (.034)	.0514 (.380)	.0982 (.279)
Number of Recognized Tribes	*.2777 (.046)	* .3013 (.027)	* .4089 (.005)	.1815 (.130)
	*.2777 (.046)	*.3170 (.026)	*.4293 (.004)	.1853 (.133)
	*.2777 (.046)	*.3015 (.033)	*.4246 (.004)	.1812 (.138)
Urban or Rural residence of majority of States Indian Population	.0722 (.370)	.1686 (.206)	.1746 (.203)	.1929 (.188)
	.0761 (.375)	.1833 (.220)	.1979 (.201)	.2033 (.195)
	.0818 (.366)	.1495 (.265)	.1585 (.252)	.1750 (.230)

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1. Question 4 - Has a staff person been designated as responsible for addressing legislative changes related to American Indians? Yes ___ No ___
2. Question 5 - In establishing initiatives for your State, how would you rank improving/expanding VR services to Indians in your service priorities? ____High ____Medium ____Low
3. Question 6.2-What do you plan to do in response to the requirement to "actively consult" with tribes and tribal organizations on State Plan
4. Question 7 - Which do you think is the best strategy to improving/increasing VR service to reservation-based Indian s?
   a) building VR services for Indians within existing State structures, or
   b) helping tribes secure funding for creating tribally administered programs, or
   c) combination of above--tribal programs operating in conjunction with existing services.
5. *significant positive relationship indicated
6. The three values indicated for each pair of variables will be presented in order of Kendalls T, Spearman's r, and Pearson's r.